

# lm.R

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```
library("robust")

## Loading required package: fit.models
## Loading required package: MASS
## Loading required package: lattice
## Loading required package: robustbase
## Loading required package: rrcov
## Scalable Robust Estimators with High Breakdown Point (version 1.4-3)
library("robustbase")
library("MASS")
library("randomForest")

## randomForest 4.6-12
## Type rfNews() to see new features/changes/bug fixes.
library("caret")

## Loading required package: ggplot2
##
## Attaching package: 'ggplot2'
## The following object is masked from 'package:randomForest':
##
##     margin
library("e1071")
library("ggplot2")
library("data.table")
library("ff")

## Loading required package: bit
## Attaching package bit
## package:bit (c) 2008-2012 Jens Oehlschlaegel (GPL-2)
## creators: bit bitwhich
## coercion: as.logical as.integer as.bit as.bitwhich which
## operator: ! & | xor != ==
## querying: print length any all min max range sum summary
## bit access: length<- [ [<- [[] [<-
## for more help type ?bit
##
## Attaching package: 'bit'
```

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## The following object is masked from 'package:data.table':
##
##      setattr
## The following object is masked from 'package:base':
##
##      xor
## Attaching package 'ff'
## -getOption("fftempdir")=="/tmp/RtmpvyHLta"
## -getOption("ffextension")==".ff"
## -getOption("ffdrops")==TRUE
## -getOption("fffinonexit")==TRUE
## -getOption("ffpagesize")==65536
## -getOption("ffcaching")== "mmnoflush" -- consider "ffeachflush" if your system stalls on large writes
## -getOption("ffbatchbytes")==16777216 -- consider a different value for tuning your system
## -getOption("ffmaxbytes")==536870912 -- consider a different value for tuning your system
##
## Attaching package: 'ff'
## The following objects are masked from 'package:bit':
##
##      clone, clone.default, clone.list
## The following objects are masked from 'package:utils':
##
##      write.csv, write.csv2
## The following objects are masked from 'package:base':
##
##      is.factor, is.ordered
library("doParallel")

## Loading required package: foreach
## Loading required package: iterators
## Loading required package: parallel

dirpath <- "~/Dropbox/Doctorate/GIT/BSyncGPGPU/"
setwd(paste(dirpath, sep=""))

source("./R-code/common.R")
NroSamples <- c(57,57, rep(100, 11))
for(kernelApp in c(1:7, 9:13)) {
  tempFeatures <- data.frame()
  for(gpu in c(1, 2, 3, 6, 7, 9, 10)){
    tempAppGpu <- data.frame(cbind(fread(file = paste("./datasets/", names(kernelsDict[kernelApp])),
    tempFeatures <- rbind(tempFeatures, tempAppGpu[sample(nrow(tempAppGpu), NroSamples[kernelApp]),
  }
}
# ggplot(tempFeatures, aes(duration, colour = gpu_name)) +
#   geom_density(position = "stack")
# ggplot(data=tempFeatures, aes(x=gpu_name, y=duration, col = gpu_name)) +

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#      geom_boxplot( )

tempFeatures <- tempFeatures[names(tempFeatures) != "V1"]

tempGpuData <- tempFeatures[, names(tempFeatures) %in% c(names(gpus))]
tempFeatures <- tempFeatures[, !names(tempFeatures) %in% c(names(gpus))]

nums <- sapply(tempFeatures, is.numeric)
tempFeatures <- tempFeatures[,nums]

tempFeatures[apply(tempFeatures, 2, is.infinite)] <- 0
tempFeatures[apply(tempFeatures, 2, is.na)] <- 0

tempDevice <- tempFeatures$device
tempFeatures$device <- NULL
tempDuration <- tempFeatures$duration

tempFeatures <- tempFeatures[,apply(tempFeatures, 2, function(v) var(v, na.rm=TRUE)!=0)]

# corFeatures <- apply()

corFeatures <- cor(getElement(tempFeatures, "duration"), tempFeatures, method = "spearman", use = "all.

tempFeatures$duration <- NULL
corFeatures <- corFeatures[, colnames(corFeatures) != "duration"]

Result <- data.frame()
# "lm", "step", "glm", "svm", "rf"
for(iML in c("lm")){

for(threshCorr in c(0.5, 0.65)){
  tempData <- data.frame()
  tempData <- subset(tempFeatures[which(abs(corFeatures) >= threshCorr)])

  if(length(tempData) > 10){
    hcFeatures <- hclust(as.dist(1-abs(cor(tempData,
                                          method = "spearman", use = "all.obs")),
                        upper = FALSE), method = "average")

    for(numberFeatures in c(10, 5)){

      cutedTree <- cutree(hcFeatures, k = numberFeatures)

      parNameTemp <- vector()

      for(numberCluster in 1:numberFeatures){
        Tempvariance <- sapply(tempData[cutedTree == numberCluster], var)
        parNameTemp[numberCluster] <- names(sort(Tempvariance)[length(Tempvariance)])
      }

      Data <- tempData[parNameTemp]
      Data <- cbind(Data, duration=tempDuration, tempGpuData)
    }
  }
}

```

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Data$compute_version <- NULL
Data$gpu_name <- NULL
Data$l1_cache_used <- NULL
Data$bus <- NULL
Data$theoretical_flops <- Data$theoretical_flops/max(Data$theoretical_flops)
# Data$bandwidth <- Data$bandwidth^2
Data$L2 <- NULL
Data$global_memory <- NULL
Data$memory_clock <- NULL
Data$num_of_cores <- NULL
Data$num_of_sm <- NULL
Data$num_sp_per_sm <- NULL

for(gpu in c(1, 2, 3, 6, 7, 9, 10)) {

  trainingData <- log(subset(Data, gpu_id != gpu) + 0.000000000000001) # training data
  testData <- log(subset(Data, gpu_id == gpu) + 0.000000000000001) # test data

  trainingDuration <- trainingData$duration
  # trainingData$theoretical_flops <- (2^trainingData$theoretical_flops - 0.000000000000001)
  trainingData$bandwidth <- NULL
  trainingData$duration <- NULL
  trainingData$gpu_id <- NULL

  testDuration <- testData$duration
  # testData$theoretical_flops <- (2^testData$theoretical_flops - 0.000000000000001)/(2^m)
  testData$bandwidth <- NULL
  testData$duration <- NULL
  testData$gpu_id <- NULL

  # cl <- makeCluster(8)
  # registerDoParallel(cl)

  if (iML == "lm") fit <- lm(trainingDuration ~ ., data = trainingData)

  if (iML == "step") fit <- step(steps = 100, scale = TRUE, direction = "both", trace = F,
                                lm(trainingDuration ~ ., data = trainingData))

  if (iML == "glm") fit <- glm(trainingDuration ~ ., data = trainingData)

  if (iML == "rlm") fit <- rlm(trainingDuration ~ ., data = trainingData)

  if (iML == "svm") fit <- svm(trainingDuration ~ ., data = trainingData, kernel="linear")

  if (iML == "rf") fit <- randomForest(trainingDuration ~ ., data = trainingData, mtry=5,
    # stopCluster(cl)

  print(paste("kernel=", names(kernelsDict[kernelApp]), " GPU=", gpus[gpu,'gpu_name'], "
  print(summary(fit))
  # print(coefficients(fit)) # model coefficients
  # print(confint(fit, level=0.95)) # CIs for model parameters
  # print(fitted(fit)) # predicted values
  # print(residuals(fit)) # residuals

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# print(anova(fit)) # anova table
# print(vcov(fit)) # covariance matrix for model parameters
# print(influence(fit)) # regression diagnostics

predictions <- predict(fit, testData)

predictions <- 2^predictions - 0.0000000000000001
testDuration <- 2^testDuration - 0.0000000000000001
accuracy <- predictions/testDuration

maxAccuracy <- max(accuracy)
minAccuracy <- min(accuracy)
sdAccuracy <- sd(accuracy)

tempResult <- data.frame(gpus[gpu,'gpu_name'], names(kernelsDict[kernelApp]), testDuration, accuracy)

Result <- rbind(Result, tempResult)

}
}
}

colnames(Result) <- c("Gpus", "Kernels", "Measured", "Predicted", "Accuracy", "threshCorr", "numberFeatures")
Result$threshCorr <- as.character(Result$threshCorr)
Result$numberFeatures <- as.character(Result$numberFeatures)

Graph <- ggplot(data=Result, aes(x=Gpus, y=Accuracy, group=Gpus, col=Gpus)) +
  geom_boxplot(size=1, outlier.size = 2.5) +
  stat_boxplot(geom='errorbar') +
  xlab(" ") +
  theme_bw() +
  ylab(expression(paste("Accuracy ", T[k]/T[m] ))) +
  facet_wrap(numberFeatures~threshCorr, scales="free")
ggsave(paste("./images/phase1/", iML, "/", names(kernelsDict[kernelApp]), ".png", sep=""), Graph, height=10, width=10)
write.csv(Result, file(paste("./results/phase1/", iML, "-", names(kernelsDict[kernelApp]), ".csv", sep="")), as.is=TRUE)
}
}

## [1] "kernel= bpn_layerforward_CUDA GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.15299 -0.06460 -0.01961  0.06450  0.24890
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -62.371633   11.442887  -5.451 9.80e-08

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```

## load.store_instructions      7.782757   3.420960   2.275 0.023542
## active_warps                0.189131   0.766718   0.247 0.805311
## shared_load_transactions    -7.067072   2.664346  -2.652 0.008375
## multiprocessor_activity      4.185894   0.852829   4.908 1.44e-06
## achieved_occupancy          2.486297   2.118112   1.174 0.241306
## device_memory_read_transactions -0.001523  0.001063  -1.433 0.152815
## misc_instructions            NA         NA         NA     NA
## executed_control.flow_instructions NA         NA         NA     NA
## fp_instructions.single        NA         NA         NA     NA
## flop_efficiency.peak_single. -3.084017  0.812339  -3.796 0.000174
## max_clock_rate               -1.081283  0.143128  -7.555 4.12e-13
## theoretical_flops            -0.387008  0.050996  -7.589 3.28e-13
##
## (Intercept)                  ***
## load.store_instructions      *
## active_warps
## shared_load_transactions     **
## multiprocessor_activity      ***
## achieved_occupancy
## device_memory_read_transactions
## misc_instructions
## executed_control.flow_instructions
## fp_instructions.single.
## flop_efficiency.peak_single. ***
## max_clock_rate              ***
## theoretical_flops           ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08883 on 332 degrees of freedom
## Multiple R-squared:  0.9886, Adjusted R-squared:  0.9883
## F-statistic: 3193 on 9 and 332 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= bpn_layerforward_CUDA GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.16743 -0.01586  0.00106  0.02183  0.12857
##
## Coefficients: (2 not defined because of singularities)
##
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -7.885e+01  4.823e+00 -16.349 < 2e-16
## load.store_instructions  1.306e+00  1.455e+00   0.898 0.370006
## active_warps        3.424e+00  3.365e-01  10.177 < 2e-16
## shared_load_transactions -3.886e+00  1.126e+00  -3.453 0.000626
## multiprocessor_activity  6.423e+00  3.660e-01  17.548 < 2e-16
## achieved_occupancy    -9.073e-01  8.763e-01  -1.035 0.301255
## device_memory_read_transactions -2.146e-03  4.391e-04  -4.888 1.59e-06
## misc_instructions      NA         NA         NA     NA

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## executed_control.flow_instructions 1.678e-01 2.945e-02 5.699 2.67e-08
## fp_instructions.single. NA NA NA NA
## flop_efficiency.peak_single. -5.217e+00 3.423e-01 -15.239 < 2e-16
## max_clock_rate -7.504e-02 6.275e-02 -1.196 0.232598
## theoretical_flops 4.173e-01 2.847e-02 14.656 < 2e-16
##
## (Intercept) ***
## load.store_instructions
## active_warps ***
## shared_load_transactions ***
## multiprocessor_activity ***
## achieved_occupancy
## device_memory_read_transactions ***
## misc_instructions
## executed_control.flow_instructions ***
## fp_instructions.single.
## flop_efficiency.peak_single. ***
## max_clock_rate
## theoretical_flops ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03581 on 331 degrees of freedom
## Multiple R-squared: 0.998, Adjusted R-squared: 0.998
## F-statistic: 1.69e+04 on 10 and 331 DF, p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpn_layerforward_CUDA GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.212795 -0.026531 -0.001987  0.029649  0.174335
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.314e+01  8.416e+00   1.562  0.1193
## load.store_instructions    2.042e+01  2.391e+00   8.540 4.97e-16
## active_warps    -5.263e+00  5.645e-01  -9.323 < 2e-16
## shared_load_transactions    -1.187e+01  1.833e+00  -6.474 3.44e-10
## multiprocessor_activity    -5.616e+00  7.483e-01  -7.506 5.70e-13
## achieved_occupancy     3.285e+00  1.530e+00   2.147  0.0325
## device_memory_read_transactions    1.283e-03  6.558e-04   1.956  0.0513
## misc_instructions      NA         NA      NA      NA
## executed_control.flow_instructions    -2.374e+00  8.101e-02  -29.308 < 2e-16
## fp_instructions.single.      NA         NA      NA      NA
## flop_efficiency.peak_single.     3.984e+00  5.963e-01   6.682 1.00e-10
## max_clock_rate    -6.556e+00  2.118e-01  -30.948 < 2e-16
## theoretical_flops    -2.333e+00  7.534e-02  -30.968 < 2e-16
##
## (Intercept)

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## load.store_instructions      ***
## active_warps                 ***
## shared_load_transactions     ***
## multiprocessor_activity      ***
## achieved_occupancy           *
## device_memory_read_transactions .
## misc_instructions
## executed_control.flow_instructions ***
## fp_instructions.single.
## flop_efficiency.peak_single.  ***
## max_clock_rate               ***
## theoretical_flops            ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04853 on 331 degrees of freedom
## Multiple R-squared:  0.9965, Adjusted R-squared:  0.9964
## F-statistic: 9525 on 10 and 331 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpnnp_layerforward_CUDA GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.056309 -0.005126  0.000652  0.007053  0.057024
##
## Coefficients: (2 not defined because of singularities)
##
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -4.951e+01  2.091e+00 -23.673 < 2e-16
## load.store_instructions    7.201e+00  6.248e-01  11.524 < 2e-16
## active_warps              1.166e+00  1.398e-01   8.338 2.05e-15
## shared_load_transactions  -6.315e+00  4.869e-01 -12.971 < 2e-16
## multiprocessor_activity    2.304e+00  1.534e-01  15.020 < 2e-16
## achieved_occupancy        -1.570e+00  3.476e-01  -4.517 8.73e-06
## device_memory_read_transactions -7.353e-04  1.814e-04  -4.053 6.31e-05
## misc_instructions              NA         NA      NA      NA
## executed_control.flow_instructions -1.042e+00  1.255e-02 -83.048 < 2e-16
## fp_instructions.single.      NA         NA      NA      NA
## flop_efficiency.peak_single. -1.953e+00  1.481e-01 -13.186 < 2e-16
## max_clock_rate              -2.344e+00  2.648e-02 -88.505 < 2e-16
## theoretical_flops           -4.496e-01  8.525e-03 -52.740 < 2e-16
##
## (Intercept)      ***
## load.store_instructions      ***
## active_warps          ***
## shared_load_transactions     ***
## multiprocessor_activity      ***
## achieved_occupancy          ***
## device_memory_read_transactions ***
## misc_instructions

```



```

## executed_control.flow_instructions ***
## fp_instructions.single.
## flop_efficiency.peak_single.      ***
## max_clock_rate                     ***
## theoretical_flops                  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.015 on 331 degrees of freedom
## Multiple R-squared:  0.9997, Adjusted R-squared:  0.9997
## F-statistic: 1.02e+05 on 10 and 331 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpn_layerforward_CUDA GPU= GTX-750 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.15796 -0.06933 -0.01870  0.06985  0.26950
##
## Coefficients: (2 not defined because of singularities)
##
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -75.02235    13.050592  -5.749 2.04e-08
## load.store_instructions      7.742778     3.261887   2.374 0.01818
## active_warps          1.362627     0.838888   1.624 0.10526
## shared_load_transactions    -7.892133     2.646563  -2.982 0.00308
## multiprocessor_activity      5.815208     1.117439   5.204 3.43e-07
## achieved_occupancy          3.096879     2.010677   1.540 0.12446
## device_memory_read_transactions -0.003318     0.001168  -2.840 0.00479
## misc_instructions              NA          NA      NA      NA
## executed_control.flow_instructions -0.338367     0.064222  -5.269 2.48e-07
## fp_instructions.single.        NA          NA      NA      NA
## flop_efficiency.peak_single.   -4.147103     1.032368  -4.017 7.30e-05
## max_clock_rate               -1.373895     0.192628  -7.132 6.25e-12
## theoretical_flops             -0.537686     0.074142  -7.252 2.93e-12
##
## (Intercept)          ***
## load.store_instructions      *
## active_warps
## shared_load_transactions    **
## multiprocessor_activity     ***
## achieved_occupancy
## device_memory_read_transactions  **
## misc_instructions
## executed_control.flow_instructions ***
## fp_instructions.single.
## flop_efficiency.peak_single.      ***
## max_clock_rate                     ***
## theoretical_flops                  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

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##
## Residual standard error: 0.08575 on 331 degrees of freedom
## Multiple R-squared:  0.9761, Adjusted R-squared:  0.9753
## F-statistic: 1350 on 10 and 331 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpn_layerforward_CUDA  GPU= GTX-980  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.070162 -0.007881 -0.001845  0.009913  0.061893
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -1.618e+01  2.091e+00  -7.737 1.24e-13
## load.store_instructions      -9.984e-01  6.120e-01  -1.631  0.1038
## active_warps      -9.435e-01  1.356e-01  -6.957 1.86e-11
## shared_load_transactions      2.155e+00  4.807e-01   4.483 1.02e-05
## multiprocessor_activity     -2.100e+00  1.656e-01 -12.680 < 2e-16
## achieved_occupancy      -6.788e-01  3.776e-01  -1.797  0.0732
## device_memory_read_transactions      3.522e-04  2.072e-04   1.700  0.0900
## misc_instructions              NA         NA      NA      NA
## executed_control.flow_instructions      7.578e-01  1.569e-02  48.286 < 2e-16
## fp_instructions.single              NA         NA      NA      NA
## flop_efficiency.peak_single.      1.687e+00  1.510e-01  11.173 < 2e-16
## max_clock_rate      2.161e+00  3.989e-02  54.184 < 2e-16
## theoretical_flops     -1.210e+00  1.187e-02 -101.936 < 2e-16
##
## (Intercept)          ***
## load.store_instructions
## active_warps          ***
## shared_load_transactions          ***
## multiprocessor_activity          ***
## achieved_occupancy      .
## device_memory_read_transactions      .
## misc_instructions
## executed_control.flow_instructions ***
## fp_instructions.single.
## flop_efficiency.peak_single.      ***
## max_clock_rate          ***
## theoretical_flops          ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.01533 on 331 degrees of freedom
## Multiple R-squared:  0.9997, Adjusted R-squared:  0.9996
## F-statistic: 9.637e+04 on 10 and 331 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

```

```

## [1] "kernel= bpn_layerforward_CUDA GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.047262 -0.005036 -0.000205  0.005931  0.035848
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.660e+01  1.466e+00  -18.138 < 2e-16
## load.store_instructions -1.698e+00  4.363e-01  -3.892  0.00012
## active_warps      -9.759e-02  9.610e-02  -1.015  0.31061
## shared_load_transactions  2.062e+00  3.421e-01   6.028 4.44e-09
## multiprocessor_activity -2.604e-01  1.112e-01  -2.342  0.01976
## achieved_occupancy    -1.595e+00  2.529e-01  -6.308 9.03e-10
## device_memory_read_transactions -2.382e-05  1.674e-04  -0.142  0.88691
## misc_instructions      NA         NA      NA      NA
## executed_control.flow_instructions  7.212e-01  1.056e-02  68.304 < 2e-16
## fp_instructions.single.      NA         NA      NA      NA
## flop_efficiency.peak_single.  2.844e-01  1.052e-01   2.705  0.00719
## max_clock_rate      1.835e+00  2.574e-02  71.300 < 2e-16
## theoretical_flops    -1.327e+00  8.619e-03 -153.943 < 2e-16
##
## (Intercept)      ***
## load.store_instructions ***
## active_warps
## shared_load_transactions ***
## multiprocessor_activity *
## achieved_occupancy ***
## device_memory_read_transactions
## misc_instructions
## executed_control.flow_instructions ***
## fp_instructions.single.
## flop_efficiency.peak_single. **
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.01056 on 331 degrees of freedom
## Multiple R-squared:  0.9998, Adjusted R-squared:  0.9998
## F-statistic: 2.061e+05 on 10 and 331 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= bpn_layerforward_CUDA GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

```
## -0.19570 -0.07743 -0.02305 0.06718 0.27196
##
## Coefficients: (1 not defined because of singularities)
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -17.94517    1.44934 -12.382 < 2e-16 ***
## load.store_instructions -4.73141    0.83915  -5.638 3.65e-08 ***
## active_warps      2.82057    0.28448   9.915 < 2e-16 ***
## shared_load_transactions 2.79306    0.56023   4.986 9.93e-07 ***
## multiprocessor_activity 1.16692    0.25866   4.511 8.93e-06 ***
## fp_instructions.single.      NA         NA      NA      NA
## max_clock_rate    -1.13594    0.12450  -9.124 < 2e-16 ***
## theoretical_flops  -0.44849    0.04537  -9.885 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09118 on 335 degrees of freedom
## Multiple R-squared:  0.9879, Adjusted R-squared:  0.9876
## F-statistic: 4543 on 6 and 335 DF, p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpnnp_layerforward_CUDA GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.45305 -0.03191  0.00057  0.02945  0.17929
##
## Coefficients: (1 not defined because of singularities)
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.63270    1.20109  -2.192  0.0291 *
## load.store_instructions -15.62902    0.54205 -28.833 < 2e-16 ***
## active_warps      6.50806    0.19850  32.787 < 2e-16 ***
## shared_load_transactions 10.05676    0.34782  28.914 < 2e-16 ***
## multiprocessor_activity 0.20619    0.19059   1.082  0.2801
## fp_instructions.single.      NA         NA      NA      NA
## max_clock_rate    -0.44902    0.02736 -16.410 < 2e-16 ***
## theoretical_flops  0.14218    0.03155   4.506 9.14e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05712 on 335 degrees of freedom
## Multiple R-squared:  0.995, Adjusted R-squared:  0.9949
## F-statistic: 1.104e+04 on 6 and 335 DF, p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpnnp_layerforward_CUDA GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
```

```

## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.19239 -0.09144  0.02032  0.07962  0.29003
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -18.87902     1.71848  -10.986 < 2e-16 ***
## load.store_instructions  -8.22498     0.87257   -9.426 < 2e-16 ***
## active_warps         3.78715     0.31689   11.951 < 2e-16 ***
## shared_load_transactions  5.30725     0.56041    9.470 < 2e-16 ***
## multiprocessor_activity  1.60419     0.30189    5.314 1.96e-07 ***
## fp_instructions.single.      NA         NA         NA      NA
## max_clock_rate    -0.31504     0.05087   -6.193 1.73e-09 ***
## theoretical_flops   -0.29169     0.05099   -5.721 2.35e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09599 on 335 degrees of freedom
## Multiple R-squared:  0.9863, Adjusted R-squared:  0.986
## F-statistic: 4016 on 6 and 335 DF, p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpnns_layerforward_CUDA GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.20149 -0.08478  0.02516  0.06334  0.22212
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -13.91997     1.39286   -9.994 < 2e-16 ***
## load.store_instructions -10.06851     0.65076  -15.472 < 2e-16 ***
## active_warps         4.49017     0.23814   18.855 < 2e-16 ***
## shared_load_transactions  6.48808     0.41728   15.548 < 2e-16 ***
## multiprocessor_activity  0.70196     0.24549    2.859 0.00451 **
## fp_instructions.single.      NA         NA         NA      NA
## max_clock_rate    -0.18314     0.03897   -4.700 3.80e-06 ***
## theoretical_flops   -0.19470     0.03782   -5.148 4.51e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08153 on 335 degrees of freedom
## Multiple R-squared:  0.9903, Adjusted R-squared:  0.9901
## F-statistic: 5694 on 6 and 335 DF, p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpnns_layerforward_CUDA GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:

```

```

## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.187232 -0.085855  0.004807  0.081043  0.276608
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -24.84862     3.00844  -8.260 3.43e-15 ***
## load.store_instructions  -5.13325     1.81963  -2.821 0.005072 **
## active_warps         2.54129     0.73344   3.465 0.000599 ***
## shared_load_transactions  3.39468     1.09233   3.108 0.002047 **
## multiprocessor_activity  2.27973     0.33021   6.904 2.55e-11 ***
## fp_instructions.single.      NA         NA      NA      NA
## max_clock_rate    -0.26197     0.09702  -2.700 0.007280 **
## theoretical_flops   -0.29399     0.06213  -4.732 3.29e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09496 on 335 degrees of freedom
## Multiple R-squared:  0.9703, Adjusted R-squared:  0.9698
## F-statistic: 1824 on 6 and 335 DF, p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpnns_layerforward_CUDA GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.082047 -0.025764 -0.009671  0.010247  0.130864
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -35.43801     0.91739 -38.629 < 2e-16 ***
## load.store_instructions  5.39556     0.54866   9.834 < 2e-16 ***
## active_warps        -1.05830     0.19756  -5.357 1.58e-07 ***
## shared_load_transactions -3.38050     0.35093  -9.633 < 2e-16 ***
## multiprocessor_activity  0.15263     0.13784   1.107  0.269
## fp_instructions.single.      NA         NA      NA      NA
## max_clock_rate     0.18147     0.02618   6.931 2.16e-11 ***
## theoretical_flops   -1.00651     0.03018 -33.353 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04737 on 335 degrees of freedom
## Multiple R-squared:  0.9967, Adjusted R-squared:  0.9966
## F-statistic: 1.676e+04 on 6 and 335 DF, p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpnns_layerforward_CUDA GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"

```

```
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.087992 -0.023569 -0.008813  0.014412  0.129805
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -27.95370     0.80333  -34.797  < 2e-16 ***
## load.store_instructions    1.55685     0.46067   3.380  0.000812 ***
## active_warps         0.11036     0.17033   0.648  0.517477
## shared_load_transactions  -0.71241     0.29087  -2.449  0.014827 *
## multiprocessor_activity    0.09868     0.13847   0.713  0.476562
## fp_instructions.single.      NA         NA      NA      NA
## max_clock_rate      0.02790     0.02370   1.177  0.239890
## theoretical_flops      -1.09667     0.03168 -34.617  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04701 on 335 degrees of freedom
## Multiple R-squared:  0.9968, Adjusted R-squared:  0.9967
## F-statistic: 1.727e+04 on 6 and 335 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpnnp_layerforward_CUDA GPU= GTX-680 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.045995 -0.005235 -0.000254  0.004457  0.029270
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -6.734e+02  4.849e+00 -138.887  <2e-16
## load.store_instructions    1.697e+02  1.368e+00  124.063  <2e-16
## active_warps      -3.777e-01  3.630e-02  -10.405  <2e-16
## executed_load.store_instructions  -2.107e+02  3.410e+00  -61.787  <2e-16
## multiprocessor_activity    5.347e-02  5.353e-02   0.999  0.3186
## achieved_occupancy      -1.627e+00  1.719e-01  -9.463  <2e-16
## integer_instructions    4.749e+01  2.830e-01  167.803  <2e-16
## misc_instructions      NA         NA      NA      NA
## executed_control.flow_instructions  NA         NA      NA      NA
## issued_load.store_instructions  -5.115e+00  2.215e+00  -2.309  0.0216
## fp_instructions.single.      NA         NA      NA      NA
## max_clock_rate      1.812e+00  2.388e-02  75.848  <2e-16
## theoretical_flops      -1.330e+00  7.189e-03 -184.976  <2e-16
##
## (Intercept)      ***
## load.store_instructions    ***
```

```

## active_warps ***
## executed_load.store_instructions ***
## multiprocessor_activity
## achieved_occupancy ***
## integer_instructions ***
## misc_instructions
## executed_control.flow_instructions
## issued_load.store_instructions *
## fp_instructions.single.
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.009795 on 332 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 2.656e+05 on 9 and 332 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpn_layerforward_CUDA GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.033533 -0.003979 -0.000208  0.003417  0.027819
##
## Coefficients: (1 not defined because of singularities)
##
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      13.18443    10.84642   1.216  0.2250
## load.store_instructions      43.53369     1.90270  22.880 < 2e-16
## active_warps         0.16074     0.08547   1.881  0.0609
## executed_load.store_instructions      16.98895     3.71677   4.571 6.87e-06
## multiprocessor_activity         0.09665     0.04988   1.938  0.0535
## achieved_occupancy       -2.04757     0.16845 -12.155 < 2e-16
## integer_instructions       45.30856     0.45797  98.933 < 2e-16
## misc_instructions      -107.52422     2.17912 -49.343 < 2e-16
## executed_control.flow_instructions       1.43841     0.16035   8.970 < 2e-16
## issued_load.store_instructions       1.09011     1.86838   0.583  0.5600
## fp_instructions.single.              NA         NA      NA      NA
## max_clock_rate         1.75164     0.02588  67.691 < 2e-16
## theoretical_flops       -1.23248     0.01606 -76.728 < 2e-16
##
## (Intercept)
## load.store_instructions ***
## active_warps .
## executed_load.store_instructions ***
## multiprocessor_activity .
## achieved_occupancy ***
## integer_instructions ***
## misc_instructions ***
## executed_control.flow_instructions ***

```



```

## issued_load.store_instructions
## fp_instructions.single.
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.008244 on 330 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 2.904e+05 on 11 and 330 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpn_layerforward_CUDA GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.040282 -0.004621  0.000006  0.004144  0.033318
##
## Coefficients: (1 not defined because of singularities)
##
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      17.23903     12.35557   1.395  0.16388
## load.store_instructions      47.12873     2.16848  21.734 < 2e-16
## active_warps         0.14711     0.10741   1.370  0.17174
## executed_load.store_instructions      21.87981     4.07863   5.365 1.53e-07
## multiprocessor_activity         0.23980     0.09171   2.615  0.00934
## achieved_occupancy       -2.32170     0.26517  -8.756 < 2e-16
## integer_instructions      49.63655     0.48365 102.628 < 2e-16
## misc_instructions      -118.15057     2.50340 -47.196 < 2e-16
## executed_control.flow_instructions      1.82127     0.18094  10.066 < 2e-16
## issued_load.store_instructions      -1.46738     2.60829  -0.563  0.57410
## fp_instructions.single.              NA         NA      NA      NA
## max_clock_rate         2.24628     0.08561  26.237 < 2e-16
## theoretical_flops       -1.26655     0.01407 -90.043 < 2e-16
##
## (Intercept)
## load.store_instructions ***
## active_warps
## executed_load.store_instructions ***
## multiprocessor_activity **
## achieved_occupancy ***
## integer_instructions ***
## misc_instructions ***
## executed_control.flow_instructions ***
## issued_load.store_instructions
## fp_instructions.single.
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```

```

## Residual standard error: 0.00895 on 330 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 2.554e+05 on 11 and 330 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpn_layerforward_CUDA  GPU= Quadro  threshCorr= 0.65  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.040458 -0.004147  0.000214  0.003858  0.033157
##
## Coefficients: (1 not defined because of singularities)
##
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      21.39817    11.93083   1.794  0.0738
## load.store_instructions  35.52355     2.54020  13.985 < 2e-16
## active_warps         0.12586     0.09317   1.351  0.1777
## executed_load.store_instructions  24.37739     4.15017   5.874 1.04e-08
## multiprocessor_activity  0.12350     0.05260   2.348  0.0195
## achieved_occupancy     -2.00785     0.17859 -11.243 < 2e-16
## integer_instructions    40.24005     1.33063  30.241 < 2e-16
## misc_instructions     -95.56795     3.76470 -25.385 < 2e-16
## executed_control.flow_instructions  1.48927     0.18233   8.168 6.74e-15
## issued_load.store_instructions  -5.19246     2.14587  -2.420  0.0161
## fp_instructions.single.           NA          NA      NA      NA
## max_clock_rate         1.15989     0.12142   9.553 < 2e-16
## theoretical_flops      -1.20090     0.02339 -51.347 < 2e-16
##
## (Intercept)      .
## load.store_instructions ***
## active_warps
## executed_load.store_instructions ***
## multiprocessor_activity *
## achieved_occupancy ***
## integer_instructions ***
## misc_instructions ***
## executed_control.flow_instructions ***
## issued_load.store_instructions *
## fp_instructions.single.
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.00907 on 330 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 2.534e+05 on 11 and 330 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpn_layerforward_CUDA  GPU= GTX-750  threshCorr= 0.65  numberFeatures= 10"

```

```

##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.043845 -0.004316  0.000232  0.003614  0.028839
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -9.668e+00  1.301e+01  -0.743  0.45809
## load.store_instructions  4.852e+01  2.221e+00  21.848 < 2e-16
## active_warps    -8.199e-02  9.260e-02  -0.885  0.37658
## executed_load.store_instructions  1.428e+01  4.377e+00   3.261  0.00123
## multiprocessor_activity  1.654e-01  5.475e-02   3.022  0.00271
## achieved_occupancy  -1.438e+00  1.978e-01  -7.269 2.64e-12
## integer_instructions  4.698e+01  2.822e-01 166.485 < 2e-16
## misc_instructions  -1.061e+02  2.387e+00 -44.439 < 2e-16
## executed_control.flow_instructions  1.324e+00  1.894e-01   6.990 1.53e-11
## issued_load.store_instructions  -3.979e+00  1.975e+00  -2.015  0.04476
## fp_instructions.single.           NA         NA         NA      NA
## max_clock_rate    1.751e+00  2.730e-02  64.138 < 2e-16
## theoretical_flops  -1.338e+00  9.591e-03 -139.558 < 2e-16
##
## (Intercept)
## load.store_instructions      ***
## active_warps
## executed_load.store_instructions  **
## multiprocessor_activity      **
## achieved_occupancy          ***
## integer_instructions          ***
## misc_instructions            ***
## executed_control.flow_instructions ***
## issued_load.store_instructions  *
## fp_instructions.single.
## max_clock_rate              ***
## theoretical_flops            ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.009541 on 330 degrees of freedom
## Multiple R-squared:  0.9997, Adjusted R-squared:  0.9997
## F-statistic: 1.015e+05 on 11 and 330 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= bpnnp_layerforward_CUDA GPU= GTX-980 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.041273 -0.004371 -0.000124  0.004471  0.030757

```

```
##
## Coefficients: (1 not defined because of singularities)
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.337e+01  1.254e+01   1.066   0.287
## load.store_instructions  5.551e+01  3.217e+00  17.255 < 2e-16
## active_warps    4.054e-02  9.254e-02   0.438   0.662
## executed_load.store_instructions  1.985e+01  4.241e+00   4.682 4.16e-06
## multiprocessor_activity -2.984e-04  5.937e-02  -0.005   0.996
## achieved_occupancy -1.380e+00  2.140e-01  -6.447 4.04e-10
## integer_instructions  5.627e+01  2.027e+00  27.762 < 2e-16
## misc_instructions -1.308e+02  4.766e+00 -27.435 < 2e-16
## executed_control.flow_instructions  1.583e+00  1.832e-01   8.642 2.42e-16
## issued_load.store_instructions -1.521e+00  2.007e+00  -0.758   0.449
## fp_instructions.single.      NA      NA      NA      NA
## max_clock_rate    1.780e+00  2.818e-02  63.172 < 2e-16
## theoretical_flops -1.344e+00  9.519e-03 -141.179 < 2e-16
##
## (Intercept)
## load.store_instructions      ***
## active_warps
## executed_load.store_instructions  ***
## multiprocessor_activity
## achieved_occupancy      ***
## integer_instructions      ***
## misc_instructions      ***
## executed_control.flow_instructions ***
## issued_load.store_instructions
## fp_instructions.single.
## max_clock_rate      ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.009502 on 330 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 2.279e+05 on 11 and 330 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= bpnnp_layerforward_CUDA GPU= GTX-970 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.047638 -0.004859 -0.000448  0.005004  0.034358
##
## Coefficients: (2 not defined because of singularities)
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    27.413808  13.822658   1.983   0.0482
## load.store_instructions -14.630459   3.546660  -4.125 4.69e-05
## active_warps    -0.344584   0.038246  -9.010 < 2e-16
## executed_load.store_instructions  19.780700   4.598252   4.302 2.23e-05
```

```

## multiprocessor_activity      0.018974  0.058288   0.326  0.7450
## achieved_occupancy          -1.405988  0.185990  -7.559 4.01e-13
## integer_instructions        -5.126490  1.094703  -4.683 4.13e-06
## misc_instructions            NA         NA         NA     NA
## executed_control.flow_instructions  1.581196  0.199085   7.942 3.13e-14
## issued_load.store_instructions -0.269653  2.071717  -0.130 0.8965
## fp_instructions.single.      NA         NA         NA     NA
## max_clock_rate               1.828023  0.025375  72.040 < 2e-16
## theoretical_flops           -1.321551  0.007602 -173.841 < 2e-16
##
## (Intercept)                  *
## load.store_instructions      ***
## active_warps                 ***
## executed_load.store_instructions ***
## multiprocessor_activity
## achieved_occupancy          ***
## integer_instructions         ***
## misc_instructions
## executed_control.flow_instructions ***
## issued_load.store_instructions
## fp_instructions.single.
## max_clock_rate              ***
## theoretical_flops           ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.01037 on 331 degrees of freedom
## Multiple R-squared:  0.9998, Adjusted R-squared:  0.9998
## F-statistic: 2.137e+05 on 10 and 331 DF,  p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= bpnnp_layerforward_CUDA GPU= GTX-680 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.19570 -0.07743 -0.02305  0.06718  0.27196
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -35.18606     2.72038  -12.934 < 2e-16
## load.store_instructions  0.38100     0.19506   1.953  0.0516
## active_warps       2.82057     0.28448   9.915 < 2e-16
## multiprocessor_activity  1.16692     0.25866   4.511 8.93e-06
## executed_control.flow_instructions -2.31935     0.46521  -4.986 9.93e-07
## fp_instructions.single.      NA         NA         NA     NA
## max_clock_rate     -1.13594     0.12450  -9.124 < 2e-16
## theoretical_flops    -0.44849     0.04537  -9.885 < 2e-16
##
## (Intercept)      ***
## load.store_instructions .

```

```

## active_warps          ***
## multiprocessor_activity ***
## executed_control.flow_instructions ***
## fp_instructions.single.
## max_clock_rate        ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09118 on 335 degrees of freedom
## Multiple R-squared:  0.9879, Adjusted R-squared:  0.9876
## F-statistic:  4543 on 6 and 335 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= bpnnp_layerforward_CUDA GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.48004 -0.03011  0.00240  0.02972  0.18651
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -41.57782      1.01109  -41.122  < 2e-16
## load.store_instructions      -4.30697      0.18891  -22.799  < 2e-16
## active_warps           7.12856      0.25997   27.420  < 2e-16
## multiprocessor_activity    0.14198      0.18810    0.755 0.450886
## executed_control.flow_instructions  0.14315      0.03966    3.610 0.000354
## fp_instructions.single.     -2.02694      0.09631  -21.047  < 2e-16
## max_clock_rate          -0.14608      0.08812   -1.658 0.098317
## theoretical_flops         0.24000      0.04118    5.829 1.32e-08
##
## (Intercept)          ***
## load.store_instructions ***
## active_warps          ***
## multiprocessor_activity
## executed_control.flow_instructions ***
## fp_instructions.single. ***
## max_clock_rate        .
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05612 on 334 degrees of freedom
## Multiple R-squared:  0.9952, Adjusted R-squared:  0.9951
## F-statistic:  9802 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_layerforward_CUDA GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)

```

```
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.159039 -0.028494 -0.001492  0.034767  0.249450
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      20.96977     2.35330   8.911 < 2e-16
## load.store_instructions    5.79489     0.32371  17.901 < 2e-16
## active_warps      -6.19677     0.42456 -14.596 < 2e-16
## multiprocessor_activity    0.53241     0.17850   2.983 0.00307
## executed_control.flow_instructions -2.00072     0.07683 -26.039 < 2e-16
## fp_instructions.single.    3.34530     0.17339  19.294 < 2e-16
## max_clock_rate     -5.47670     0.20037 -27.332 < 2e-16
## theoretical_flops    -1.90618     0.06859 -27.790 < 2e-16
##
## (Intercept)          ***
## load.store_instructions ***
## active_warps          ***
## multiprocessor_activity **
## executed_control.flow_instructions ***
## fp_instructions.single. ***
## max_clock_rate        ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05522 on 334 degrees of freedom
## Multiple R-squared:  0.9955, Adjusted R-squared:  0.9954
## F-statistic: 1.05e+04 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_layerforward_CUDA GPU= Quadro threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.208134 -0.011448 -0.000062  0.009871  0.091524
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -17.64101     0.41482 -42.527 < 2e-16
## load.store_instructions  -0.82277     0.05620 -14.641 < 2e-16
## active_warps         2.82505     0.07727  36.559 < 2e-16
## multiprocessor_activity -0.40489     0.07637  -5.301 2.09e-07
## executed_control.flow_instructions -0.99207     0.01712 -57.949 < 2e-16
## fp_instructions.single.  -0.03516     0.02896  -1.214  0.226
## max_clock_rate       -2.26158     0.03774 -59.927 < 2e-16
## theoretical_flops     -0.46050     0.01228 -37.494 < 2e-16
##
## (Intercept)          ***
## load.store_instructions ***
## active_warps          ***
```

```

## multiprocessor_activity          ***
## executed_control.flow_instructions ***
## fp_instructions.single.
## max_clock_rate                   ***
## theoretical_flops                 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.02456 on 334 degrees of freedom
## Multiple R-squared:  0.9991, Adjusted R-squared:  0.9991
## F-statistic: 5.427e+04 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_layerforward_CUDA GPU= GTX-750 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.14542 -0.08084 -0.01842  0.06853  0.29485
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -29.32939     1.68656  -17.390   < 2e-16
## load.store_instructions    -0.29745     0.51548   -0.577   0.5643
## active_warps         1.57327     0.69539    2.262   0.0243
## multiprocessor_activity     2.05482     0.30885    6.653 1.17e-10
## executed_control.flow_instructions  -0.37373     0.05141   -7.269 2.58e-12
## fp_instructions.single.    -0.08291     0.19061   -0.435   0.6639
## max_clock_rate        -1.07028     0.14323   -7.472 6.96e-13
## theoretical_flops        -0.42310     0.06048   -6.995 1.45e-11
##
## (Intercept)          ***
## load.store_instructions
## active_warps          *
## multiprocessor_activity      ***
## executed_control.flow_instructions ***
## fp_instructions.single.
## max_clock_rate          ***
## theoretical_flops        ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08837 on 334 degrees of freedom
## Multiple R-squared:  0.9744, Adjusted R-squared:  0.9738
## F-statistic: 1813 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_layerforward_CUDA GPU= GTX-980 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```



```
## -0.076974 -0.009281 -0.000798 0.008672 0.129827
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -29.44036    0.28040 -104.994 < 2e-16
## load.store_instructions    1.92473    0.05485  35.090 < 2e-16
## active_warps        -2.19459    0.08175 -26.846 < 2e-16
## multiprocessor_activity  -0.21892    0.05466  -4.005 7.65e-05
## executed_control.flow_instructions  0.70657    0.01642  43.019 < 2e-16
## fp_instructions.single.    0.54311    0.02399  22.639 < 2e-16
## max_clock_rate        2.02478    0.04406  45.957 < 2e-16
## theoretical_flops      -1.15653    0.01232 -93.867 < 2e-16
##
## (Intercept)          ***
## load.store_instructions ***
## active_warps          ***
## multiprocessor_activity ***
## executed_control.flow_instructions ***
## fp_instructions.single. ***
## max_clock_rate        ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.01855 on 334 degrees of freedom
## Multiple R-squared:  0.9995, Adjusted R-squared:  0.9995
## F-statistic: 9.396e+04 on 7 and 334 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_layerforward_CUDA GPU= GTX-970 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.048727 -0.005655 -0.000243  0.006622  0.043787
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -33.214648    0.172570 -192.471 < 2e-16
## load.store_instructions    0.804627    0.028847  27.893 < 2e-16
## active_warps        -0.353922    0.041470  -8.534 5.02e-16
## multiprocessor_activity  -0.331698    0.033830  -9.805 < 2e-16
## executed_control.flow_instructions  0.749027    0.010146  73.827 < 2e-16
## fp_instructions.single.   -0.218661    0.013061 -16.741 < 2e-16
## max_clock_rate        1.886296    0.025810  73.084 < 2e-16
## theoretical_flops      -1.310347    0.008155 -160.685 < 2e-16
##
## (Intercept)          ***
## load.store_instructions ***
## active_warps          ***
## multiprocessor_activity ***
## executed_control.flow_instructions ***
## fp_instructions.single. ***
```

```

## max_clock_rate          ***
## theoretical_flops       ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.01131 on 334 degrees of freedom
## Multiple R-squared:  0.9998, Adjusted R-squared:  0.9998
## F-statistic: 2.564e+05 on 7 and 334 DF,  p-value: < 2.2e-16

## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.0220706 -0.0025202  0.0002894  0.0025562  0.0304253
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.972e+03  6.008e+02  -3.283 0.001137
## load.store_instructions    5.089e+02  1.319e+02   3.859 0.000137
## active_warps      1.187e+00  5.790e-02  20.509 < 2e-16
## issue_slots      1.422e+00  4.834e-02  29.418 < 2e-16
## multiprocessor_activity  -1.057e-01  4.368e-02  -2.420 0.016061
## achieved_occupancy    -1.840e+00  1.309e-01 -14.055 < 2e-16
## global_load_transactions    2.255e+02  1.045e+02   2.157 0.031725
## global_store_transactions  -2.096e+02  1.745e+02  -1.202 0.230330
## device_memory_read_transactions    2.838e-03  2.273e-03   1.249 0.212716
## issued_load.store_instructions    7.718e-02  6.610e-02   1.168 0.243837
## executed_load.store_instructions  -5.265e+02  8.514e+01  -6.184 1.86e-09
## max_clock_rate    -2.996e+00  1.053e-02 -284.416 < 2e-16
## theoretical_flops    -7.850e-01  9.629e-04 -815.242 < 2e-16
##
## (Intercept)          **
## load.store_instructions    ***
## active_warps          ***
## issue_slots           ***
## multiprocessor_activity  *
## achieved_occupancy     ***
## global_load_transactions  *
## global_store_transactions
## device_memory_read_transactions
## issued_load.store_instructions
## executed_load.store_instructions ***
## max_clock_rate        ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.005571 on 329 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 4.627e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##

```

```

## [1] "kernel= bpn adjust_weights_cuda GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.0150286 -0.0027058 -0.0000739  0.0024000  0.0305940
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      1.634e+03   3.531e+02   4.627 5.33e-06
## load.store_instructions -3.100e+02   6.615e+01  -4.686 4.08e-06
## active_warps      5.670e-01   1.016e-01   5.581 5.01e-08
## issue_slots      1.471e+00   4.930e-02  29.841 < 2e-16
## multiprocessor_activity -1.270e-01   3.874e-02  -3.278 0.00116
## achieved_occupancy -1.126e+00   1.234e-01  -9.123 < 2e-16
## global_load_transactions -3.460e+02   7.549e+01  -4.583 6.50e-06
## global_store_transactions  6.495e+02   1.416e+02   4.585 6.45e-06
## device_memory_read_transactions  8.845e-03   2.061e-03   4.292 2.33e-05
## issued_load.store_instructions -1.804e-01   7.760e-02  -2.325 0.02070
## executed_load.store_instructions  5.637e+00   1.087e-01  51.844 < 2e-16
## max_clock_rate -2.983e+00   1.039e-02 -287.195 < 2e-16
## theoretical_flops -7.804e-01   8.154e-04 -957.104 < 2e-16
##
## (Intercept)      ***
## load.store_instructions ***
## active_warps      ***
## issue_slots      ***
## multiprocessor_activity **
## achieved_occupancy ***
## global_load_transactions ***
## global_store_transactions ***
## device_memory_read_transactions ***
## issued_load.store_instructions *
## executed_load.store_instructions ***
## max_clock_rate      ***
## theoretical_flops   ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.005411 on 329 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 4.898e+05 on 12 and 329 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpn adjust_weights_cuda GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.0178926 -0.0026369  0.0000239  0.0023692  0.0293760
##

```

```

## Coefficients:
##
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      1.480e+03  3.552e+02   4.168 3.94e-05
## load.store_instructions -2.796e+02  6.658e+01  -4.199 3.45e-05
## active_warps        4.010e-01  8.693e-02   4.613 5.70e-06
## issue_slots         6.020e-01  9.047e-02   6.655 1.19e-10
## multiprocessor_activity -4.014e-01  6.510e-02  -6.166 2.05e-09
## achieved_occupancy    -6.657e-01  1.487e-01  -4.477 1.05e-05
## global_load_transactions -3.135e+02  7.595e+01  -4.128 4.64e-05
## global_store_transactions  5.882e+02  1.425e+02   4.127 4.66e-05
## device_memory_read_transactions  1.041e-02  1.966e-03   5.293 2.20e-07
## issued_load.store_instructions -2.384e-01  7.062e-02  -3.376 0.000824
## executed_load.store_instructions  5.180e+00  1.128e-01  45.907 < 2e-16
## max_clock_rate      -3.115e+00  1.679e-02 -185.548 < 2e-16
## theoretical_flops     -7.740e-01  1.105e-03 -700.382 < 2e-16
##
## (Intercept)      ***
## load.store_instructions ***
## active_warps      ***
## issue_slots       ***
## multiprocessor_activity ***
## achieved_occupancy ***
## global_load_transactions ***
## global_store_transactions ***
## device_memory_read_transactions ***
## issued_load.store_instructions ***
## executed_load.store_instructions ***
## max_clock_rate    ***
## theoretical_flops  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.005338 on 329 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 5.02e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.023084 -0.002705  0.000450  0.002757  0.033579
##
## Coefficients:
##
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      1.741e+03  3.755e+02   4.637 5.12e-06
## load.store_instructions -3.314e+02  7.036e+01  -4.709 3.67e-06
## active_warps        1.102e+00  7.574e-02  14.555 < 2e-16
## issue_slots         1.879e+00  2.895e-01   6.490 3.16e-10
## multiprocessor_activity -1.205e-01  4.240e-02  -2.841 0.00477
## achieved_occupancy    -1.241e+00  1.305e-01  -9.509 < 2e-16
## global_load_transactions -3.693e+02  8.027e+01  -4.600 6.03e-06

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## global_store_transactions      6.930e+02  1.506e+02   4.601 6.02e-06
## device_memory_read_transactions 1.087e-02  2.187e-03   4.970 1.08e-06
## issued_load.store_instructions -6.670e-03  1.068e-01  -0.062 0.95023
## executed_load.store_instructions 5.607e+00  5.165e-01  10.854 < 2e-16
## max_clock_rate                 -2.917e+00  3.901e-02  -74.794 < 2e-16
## theoretical_flops              -7.857e-01  2.427e-03 -323.802 < 2e-16
##
## (Intercept)                    ***
## load.store_instructions         ***
## active_warps                   ***
## issue_slots                    ***
## multiprocessor_activity        **
## achieved_occupancy             ***
## global_load_transactions        ***
## global_store_transactions       ***
## device_memory_read_transactions ***
## issued_load.store_instructions ***
## executed_load.store_instructions ***
## max_clock_rate                 ***
## theoretical_flops              ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.005907 on 329 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 4.136e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-750 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.0175214 -0.0018961 -0.0000729  0.0017135  0.0265926
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      3.475e+03  3.105e+02  11.194 < 2e-16
## load.store_instructions -6.550e+02  5.816e+01 -11.261 < 2e-16
## active_warps        3.789e-02  7.698e-02   0.492  0.6229
## issue_slots         1.043e+00  4.853e-02  21.488 < 2e-16
## multiprocessor_activity 3.625e-03  3.291e-02   0.110  0.9124
## achieved_occupancy  -4.560e-01  1.082e-01  -4.213 3.26e-05
## global_load_transactions -7.453e+02  6.645e+01 -11.215 < 2e-16
## global_store_transactions 1.399e+03  1.247e+02  11.217 < 2e-16
## device_memory_read_transactions 1.103e-02  1.818e-03   6.067 3.59e-09
## issued_load.store_instructions -4.507e-02  5.433e-02  -0.830  0.4074
## executed_load.store_instructions 1.548e+00  2.958e-01   5.234 2.97e-07
## max_clock_rate      -1.015e+00  1.204e-01  -8.431 1.09e-15
## theoretical_flops     9.435e-02  5.442e-02   1.734  0.0839
##
## (Intercept)                    ***
## load.store_instructions         ***

```

```

## active_warps
## issue_slots ***
## multiprocessor_activity
## achieved_occupancy ***
## global_load_transactions ***
## global_store_transactions ***
## device_memory_read_transactions ***
## issued_load.store_instructions
## executed_load.store_instructions ***
## max_clock_rate ***
## theoretical_flops .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.004515 on 329 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 4.366e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-980 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.0173322 -0.0018843  0.0000369  0.0019388  0.0222057
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      2.061e+03  2.968e+02   6.944 2.04e-11
## load.store_instructions -3.912e+02  5.562e+01  -7.034 1.17e-11
## active_warps        5.163e-01  5.506e-02   9.377 < 2e-16
## issue_slots        2.973e-01  8.028e-02   3.704 0.000249
## multiprocessor_activity -6.608e-02  2.955e-02  -2.236 0.026020
## achieved_occupancy -1.451e+00  9.198e-02 -15.772 < 2e-16
## global_load_transactions -4.485e+02  6.357e+01  -7.055 1.02e-11
## global_store_transactions  8.425e+02  1.193e+02   7.063 9.78e-12
## device_memory_read_transactions  1.585e-02  2.134e-03   7.426 9.70e-13
## issued_load.store_instructions -9.308e-02  4.674e-02  -1.992 0.047250
## executed_load.store_instructions -2.500e+00  5.552e-01  -4.503 9.30e-06
## max_clock_rate      9.355e-01  2.445e-01   3.826 0.000156
## theoretical_flops    -6.985e-01  5.232e-03 -133.494 < 2e-16
##
## (Intercept) ***
## load.store_instructions ***
## active_warps ***
## issue_slots ***
## multiprocessor_activity *
## achieved_occupancy ***
## global_load_transactions ***
## global_store_transactions ***
## device_memory_read_transactions ***
## issued_load.store_instructions *
## executed_load.store_instructions ***

```

```

## max_clock_rate          ***
## theoretical_flops       ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.00411 on 329 degrees of freedom
## Multiple R-squared:    1, Adjusted R-squared:    1
## F-statistic: 8.013e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.015208 -0.002254  0.000216  0.002016  0.034316
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      88.290465  351.977468   0.251  0.80209
## load.store_instructions -21.891683  65.954180  -0.332  0.74016
## active_warps         0.793397   0.056612  14.015 < 2e-16
## issue_slots          0.250139   0.110338   2.267  0.02404
## multiprocessor_activity -0.097782   0.034524  -2.832  0.00491
## achieved_occupancy    -1.272092   0.106777 -11.913 < 2e-16
## global_load_transactions -27.200295  75.150650  -0.362  0.71763
## global_store_transactions 51.414565 140.997722   0.365  0.71561
## device_memory_read_transactions 0.002604  0.001948   1.337  0.18212
## issued_load.store_instructions -0.038953  0.053931  -0.722  0.47064
## executed_load.store_instructions -2.334382  0.759711  -3.073  0.00230
## max_clock_rate        0.919746   0.339401   2.710  0.00708
## theoretical_flops     -1.020063   0.020864 -48.890 < 2e-16
##
## (Intercept)
## load.store_instructions
## active_warps          ***
## issue_slots           *
## multiprocessor_activity **
## achieved_occupancy    ***
## global_load_transactions
## global_store_transactions
## device_memory_read_transactions
## issued_load.store_instructions
## executed_load.store_instructions **
## max_clock_rate        **
## theoretical_flops     ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.00476 on 329 degrees of freedom
## Multiple R-squared:    1, Adjusted R-squared:    1
## F-statistic: 6.246e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##

```

```
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.16471 -0.09845  0.03456  0.06728  0.18669
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -33.23272     2.71474  -12.242  < 2e-16 ***
## active_warps      0.13098     0.06620   1.979  0.048680 *
## issue_slots       0.30707     0.04049   7.584  3.36e-13 ***
## multiprocessor_activity  4.27861     0.58796   7.277  2.45e-12 ***
## achieved_occupancy -5.80869     1.58750  -3.659  0.000294 ***
## global_load_transactions  0.46339     0.03399  13.633  < 2e-16 ***
## max_clock_rate    -1.19376     0.09704  -12.302  < 2e-16 ***
## theoretical_flops   -0.72818     0.01219 -59.735  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0895 on 334 degrees of freedom
## Multiple R-squared:  0.9845, Adjusted R-squared:  0.9842
## F-statistic: 3026 on 7 and 334 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.042795 -0.011146 -0.000992  0.009226  0.086646
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    23.482441     0.834476   28.140  < 2e-16 ***
## active_warps    -4.869271     0.055050  -88.451  < 2e-16 ***
## issue_slots      3.023638     0.029088  103.947  < 2e-16 ***
## multiprocessor_activity -0.364175     0.126537   -2.878  0.00426 **
## achieved_occupancy  2.794567     0.317402   8.805  < 2e-16 ***
## global_load_transactions  2.803238     0.026979  103.906  < 2e-16 ***
## max_clock_rate   -2.753725     0.024504 -112.377  < 2e-16 ***
## theoretical_flops  -0.766498     0.002536 -302.222  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.01822 on 334 degrees of freedom
## Multiple R-squared:  0.9994, Adjusted R-squared:  0.9993
## F-statistic: 7.398e+04 on 7 and 334 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
```



```

## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.14897 -0.05456  0.01051  0.05166  0.20375
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -37.666356    2.795789  -13.473  < 2e-16 ***
## active_warps     -0.297363    0.056073   -5.303 2.07e-07 ***
## issue_slots       0.561278    0.030886   18.173  < 2e-16 ***
## multiprocessor_activity  5.951533    0.604900    9.839  < 2e-16 ***
## achieved_occupancy -5.943025    1.375769   -4.320 2.06e-05 ***
## global_load_transactions  0.590542    0.027725   21.300  < 2e-16 ***
## max_clock_rate    -1.251077    0.052942  -23.631  < 2e-16 ***
## theoretical_flops  -0.702129    0.009835  -71.391  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06917 on 334 degrees of freedom
## Multiple R-squared:  0.9907, Adjusted R-squared:  0.9905
## F-statistic: 5078 on 7 and 334 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.18282 -0.09084  0.02190  0.06265  0.26054
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -37.96056    2.60425  -14.576  < 2e-16 ***
## active_warps      0.11408    0.07296    1.563  0.1189
## issue_slots       0.38710    0.03978    9.732  < 2e-16 ***
## multiprocessor_activity  4.68742    0.58309    8.039 1.58e-14 ***
## achieved_occupancy -3.52370    1.65690   -2.127  0.0342 *
## global_load_transactions  0.35805    0.03656    9.793  < 2e-16 ***
## max_clock_rate    -0.68325    0.06184  -11.048  < 2e-16 ***
## theoretical_flops  -0.71135    0.01269  -56.038  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09253 on 334 degrees of freedom
## Multiple R-squared:  0.9835, Adjusted R-squared:  0.9831
## F-statistic: 2842 on 7 and 334 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)

```

```

##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.016595 -0.005474 -0.000179  0.005308  0.048560
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -17.494517   0.237414  -73.688   <2e-16 ***
## active_warps     -0.350542   0.006050  -57.944   <2e-16 ***
## issue_slots       1.017494   0.004180  243.409   <2e-16 ***
## multiprocessor_activity  0.009404   0.055116   0.171   0.8646
## achieved_occupancy  0.357872   0.140623   2.545   0.0114 *
## global_load_transactions  0.301709   0.002883  104.658   <2e-16 ***
## max_clock_rate    -0.403236   0.005167  -78.047   <2e-16 ***
## theoretical_flops   0.343411   0.005134   66.885   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.007976 on 334 degrees of freedom
## Multiple R-squared:  0.9998, Adjusted R-squared:  0.9998
## F-statistic: 2.398e+05 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.056303 -0.018024  0.000412  0.009981  0.069091
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -25.68083   0.95152  -26.989   < 2e-16 ***
## active_warps     0.49699   0.02464   20.174   < 2e-16 ***
## issue_slots       0.29043   0.01253   23.177   < 2e-16 ***
## multiprocessor_activity  0.34816   0.22476   1.549   0.122
## achieved_occupancy -3.06042   0.57105  -5.359 1.56e-07 ***
## global_load_transactions  0.22123   0.01199   18.457   < 2e-16 ***
## max_clock_rate    -0.15373   0.02293   -6.705 8.60e-11 ***
## theoretical_flops   -0.71896   0.00433 -166.052   < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03184 on 334 degrees of freedom
## Multiple R-squared:  0.9979, Adjusted R-squared:  0.9979
## F-statistic: 2.284e+04 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:

```

```

##           Min           1Q           Median           3Q           Max
## -0.047606 -0.016793  0.000093  0.009066  0.065197
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -27.123969   0.821889  -33.002 < 2e-16 ***
## active_warps         0.756968   0.023465   32.259 < 2e-16 ***
## issue_slots          0.262688   0.011066   23.737 < 2e-16 ***
## multiprocessor_activity 0.201514   0.196071    1.028  0.305
## achieved_occupancy  -2.780108   0.497050   -5.593 4.64e-08 ***
## global_load_transactions -0.009997  0.012245   -0.816  0.415
## max_clock_rate      -0.099243   0.020430   -4.858 1.83e-06 ***
## theoretical_flops    -0.961541   0.005637 -170.583 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.02785 on 334 degrees of freedom
## Multiple R-squared:  0.9985, Adjusted R-squared:  0.9984
## F-statistic: 3.123e+04 on 7 and 334 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-680 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##           Min           1Q           Median           3Q           Max
## -0.0177381 -0.0022139  0.0000394  0.0020924  0.0279945
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -9.934e+02  1.965e+02  -5.054 7.18e-07
## load.store_instructions 1.084e+02  1.262e+02   0.859  0.39074
## active_warps         6.564e-01  6.525e-02  10.059 < 2e-16
## multiprocessor_activity -1.892e-01  3.972e-02  -4.763 2.86e-06
## achieved_occupancy  -1.612e+00  1.193e-01 -13.515 < 2e-16
## global_store_transactions 1.208e+02  4.623e+01   2.614  0.00937
## device_memory_read_transactions 2.329e-03  2.030e-03   1.147  0.25221
## issued_load.store_instructions -5.209e-03  5.451e-02  -0.096  0.92392
## executed_load.store_instructions -3.928e+02  6.178e+01  -6.358 6.83e-10
## integer_instructions  1.603e+02  1.347e+02   1.190  0.23490
## misc_instructions     3.545e+00  1.037e-01  34.188 < 2e-16
## max_clock_rate       1.895e+00  1.472e-01  12.872 < 2e-16
## theoretical_flops    -1.085e+00  8.988e-03 -120.719 < 2e-16
##
## (Intercept)      ***
## load.store_instructions
## active_warps      ***
## multiprocessor_activity
## achieved_occupancy
## global_store_transactions
## device_memory_read_transactions
## issued_load.store_instructions
## executed_load.store_instructions ***

```

```

## integer_instructions
## misc_instructions          ***
## max_clock_rate            ***
## theoretical_flops          ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.004975 on 329 degrees of freedom
## Multiple R-squared:      1, Adjusted R-squared:      1
## F-statistic: 5.803e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.015154 -0.002542 -0.000199  0.002254  0.032095
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.007e+03  1.878e+02  -5.360 1.57e-07
## load.store_instructions -4.627e+02  9.004e+01  -5.139 4.75e-07
## active_warps      9.392e-01  8.930e-02  10.518 < 2e-16
## multiprocessor_activity -1.399e-01  3.678e-02  -3.803 0.000171
## achieved_occupancy -1.711e+00  1.181e-01 -14.488 < 2e-16
## global_store_transactions -1.305e+02  2.526e+01  -5.167 4.14e-07
## device_memory_read_transactions -3.807e-03  1.701e-03  -2.238 0.025884
## issued_load.store_instructions -1.127e-01  7.313e-02  -1.541 0.124259
## executed_load.store_instructions -7.705e-01  2.473e-01  -3.116 0.001994
## integer_instructions    5.910e+02  1.153e+02   5.127 5.03e-07
## misc_instructions      3.229e+00  9.903e-02  32.603 < 2e-16
## max_clock_rate        1.447e+00  1.414e-01  10.229 < 2e-16
## theoretical_flops     -1.057e+00  8.507e-03 -124.253 < 2e-16
##
## (Intercept)          ***
## load.store_instructions ***
## active_warps          ***
## multiprocessor_activity ***
## achieved_occupancy    ***
## global_store_transactions ***
## device_memory_read_transactions *
## issued_load.store_instructions
## executed_load.store_instructions **
## integer_instructions  ***
## misc_instructions      ***
## max_clock_rate        ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.005066 on 329 degrees of freedom
## Multiple R-squared:      1, Adjusted R-squared:  0.9999

```

```

## F-statistic: 5.587e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda  GPU= Tesla-K20  threshCorr= 0.65  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.0180199 -0.0022460 -0.0000419  0.0022474  0.0309408
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -8.700e+02  1.965e+02  -4.428 1.30e-05
## load.store_instructions -4.014e+02  9.364e+01  -4.287 2.38e-05
## active_warps      7.036e-01  8.853e-02   7.948 3.05e-14
## multiprocessor_activity -3.912e-01  6.212e-02  -6.298 9.68e-10
## achieved_occupancy  -1.105e+00  1.586e-01  -6.964 1.80e-11
## global_store_transactions -1.131e+02  2.629e+01  -4.301 2.24e-05
## device_memory_read_transactions -6.978e-04  1.846e-03  -0.378  0.70572
## issued_load.store_instructions -2.003e-01  6.312e-02  -3.173  0.00165
## executed_load.store_instructions -2.186e-01  5.596e-01  -0.391  0.69635
## integer_instructions    5.124e+02  1.199e+02   4.272 2.54e-05
## misc_instructions     2.818e+00  3.160e-01   8.917 < 2e-16
## max_clock_rate      8.413e-01  4.552e-01   1.848  0.06546
## theoretical_flops    -1.021e+00  2.806e-02 -36.384 < 2e-16
##
## (Intercept)          ***
## load.store_instructions ***
## active_warps          ***
## multiprocessor_activity ***
## achieved_occupancy    ***
## global_store_transactions ***
## device_memory_read_transactions
## issued_load.store_instructions **
## executed_load.store_instructions
## integer_instructions  ***
## misc_instructions     ***
## max_clock_rate        .
## theoretical_flops     ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.005115 on 329 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 5.468e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda  GPU= Quadro  threshCorr= 0.65  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

```
## -0.016177 -0.002544 -0.000174 0.002340 0.032717
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -9.888e+02  1.925e+02  -5.137 4.79e-07
## load.store_instructions -4.563e+02  9.272e+01  -4.922 1.36e-06
## active_warps        9.157e-01  6.845e-02  13.379 < 2e-16
## multiprocessor_activity -1.557e-01  3.682e-02  -4.229 3.05e-05
## achieved_occupancy    -1.587e+00  1.139e-01 -13.930 < 2e-16
## global_store_transactions -1.286e+02  2.600e+01  -4.947 1.21e-06
## device_memory_read_transactions -3.909e-03  1.746e-03  -2.240 0.02578
## issued_load.store_instructions -1.757e-01  8.295e-02  -2.118 0.03495
## executed_load.store_instructions -2.737e-01  7.742e-01  -0.354 0.72393
## integer_instructions    5.824e+02  1.186e+02   4.911 1.43e-06
## misc_instructions       3.012e+00  2.541e-01  11.854 < 2e-16
## max_clock_rate         1.137e+00  3.645e-01   3.119 0.00197
## theoretical_flops      -1.037e+00  2.229e-02 -46.544 < 2e-16
##
## (Intercept)      ***
## load.store_instructions ***
## active_warps      ***
## multiprocessor_activity ***
## achieved_occupancy ***
## global_store_transactions ***
## device_memory_read_transactions *
## issued_load.store_instructions *
## executed_load.store_instructions
## integer_instructions ***
## misc_instructions  ***
## max_clock_rate     **
## theoretical_flops  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.005092 on 329 degrees of freedom
## Multiple R-squared:  1, Adjusted R-squared:  0.9999
## F-statistic: 5.566e+05 on 12 and 329 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-750 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.016334 -0.002614 -0.000357  0.001877  0.033400
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      28.812825 239.568555   0.120   0.904
## load.store_instructions 36.818667 115.150033   0.320   0.749
## active_warps         0.535564  0.089800   5.964 6.35e-09
## multiprocessor_activity -0.019348  0.040929  -0.473   0.637
## achieved_occupancy    -0.881010  0.158164  -5.570 5.29e-08
```

```

## global_store_transactions      9.488837  32.282478   0.294   0.769
## device_memory_read_transactions -0.002655   0.001795  -1.479   0.140
## issued_load.store_instructions -0.079639   0.062720  -1.270   0.205
## executed_load.store_instructions -1.890664   0.270378  -6.993  1.51e-11
## integer_instructions          -47.132872  147.243299  -0.320   0.749
## misc_instructions              3.247948   0.176643  18.387 < 2e-16
## max_clock_rate                1.846519   0.134190  13.761 < 2e-16
## theoretical_flops             -0.902886   0.101977  -8.854 < 2e-16
##
## (Intercept)
## load.store_instructions
## active_warps                  ***
## multiprocessor_activity
## achieved_occupancy            ***
## global_store_transactions
## device_memory_read_transactions
## issued_load.store_instructions
## executed_load.store_instructions ***
## integer_instructions
## misc_instructions              ***
## max_clock_rate                ***
## theoretical_flops              ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.005059 on 329 degrees of freedom
## Multiple R-squared:  0.9999, Adjusted R-squared:  0.9999
## F-statistic: 3.477e+05 on 12 and 329 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-980 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.0176242 -0.0021792 -0.0000096  0.0018569  0.0294243
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -6.841e+02  1.928e+02  -3.548  0.000445
## load.store_instructions -3.065e+02  9.268e+01  -3.307  0.001049
## active_warps       7.358e-01  6.162e-02  11.941 < 2e-16
## multiprocessor_activity -1.052e-01  3.263e-02  -3.223  0.001394
## achieved_occupancy  -1.611e+00  1.092e-01 -14.756 < 2e-16
## global_store_transactions -8.662e+01  2.603e+01  -3.328  0.000975
## device_memory_read_transactions -2.090e-03  2.366e-03  -0.883  0.377655
## issued_load.store_instructions -1.015e-01  5.513e-02  -1.842  0.066408
## executed_load.store_instructions -1.467e+00  5.386e-01  -2.724  0.006791
## integer_instructions   3.918e+02  1.184e+02   3.308  0.001042
## misc_instructions     3.102e+00  6.897e-01   4.498  9.54e-06
## max_clock_rate        1.645e+00  1.132e-01  14.530 < 2e-16
## theoretical_flops     -1.038e+00  7.798e-02 -13.306 < 2e-16
##

```

```

## (Intercept) ***
## load.store_instructions **
## active_warps ***
## multiprocessor_activity **
## achieved_occupancy ***
## global_store_transactions ***
## device_memory_read_transactions
## issued_load.store_instructions .
## executed_load.store_instructions **
## integer_instructions **
## misc_instructions ***
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.004327 on 329 degrees of freedom
## Multiple R-squared:  1, Adjusted R-squared:  1
## F-statistic: 7.232e+05 on 12 and 329 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-970 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.014689 -0.001893 -0.000065  0.001975  0.033165
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -9.490e+02  1.677e+02  -5.658 3.34e-08
## load.store_instructions    -4.382e+02  8.064e+01  -5.434 1.08e-07
## active_warps         6.561e-01  5.798e-02  11.317 < 2e-16
## multiprocessor_activity    -1.481e-01  3.377e-02  -4.385 1.56e-05
## achieved_occupancy    -1.418e+00  1.122e-01  -12.630 < 2e-16
## global_store_transactions    -1.240e+02  2.263e+01  -5.479 8.53e-08
## device_memory_read_transactions    -4.620e-03  1.565e-03  -2.952 0.00339
## issued_load.store_instructions    -6.613e-03  4.822e-02  -0.137 0.89100
## executed_load.store_instructions    9.226e-01  1.146e+00   0.805 0.42129
## integer_instructions     5.549e+02  1.030e+02   5.387 1.37e-07
## misc_instructions     6.698e+00  1.553e+00   4.314 2.12e-05
## max_clock_rate     1.868e+00  1.290e-01  14.479 < 2e-16
## theoretical_flops    -1.081e+00  7.705e-03 -140.295 < 2e-16
##
## (Intercept) ***
## load.store_instructions ***
## active_warps ***
## multiprocessor_activity ***
## achieved_occupancy ***
## global_store_transactions ***
## device_memory_read_transactions **
## issued_load.store_instructions
## executed_load.store_instructions

```



```

## integer_instructions      ***
## misc_instructions        ***
## max_clock_rate          ***
## theoretical_flops        ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.004504 on 329 degrees of freedom
## Multiple R-squared: 1, Adjusted R-squared: 1
## F-statistic: 6.975e+05 on 12 and 329 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= GTX-680 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.19029 -0.09348 -0.01294  0.08953  0.23020
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -39.90702     3.31582  -12.035 < 2e-16 ***
## load.store_instructions
##      -0.10900     0.10388   -1.049 0.294790
## active_warps
##      1.08976     0.13601    8.012 1.90e-14 ***
## multiprocessor_activity
##      3.45649     0.76031    4.546 7.65e-06 ***
## achieved_occupancy
##     -2.20010     1.94749   -1.130 0.259408
## issued_load.store_instructions
##     -0.10487     0.07189   -1.459 0.145551
## max_clock_rate
##     -0.31393     0.08543   -3.675 0.000277 ***
## theoretical_flops
##     -0.74093     0.01544  -47.991 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1114 on 334 degrees of freedom
## Multiple R-squared: 0.976, Adjusted R-squared: 0.9754
## F-statistic: 1936 on 7 and 334 DF, p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.210752 -0.076088  0.006584  0.072911  0.314886
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -48.47136     2.74862  -17.635 < 2e-16 ***
## load.store_instructions
##     -0.24517     0.06769   -3.622 0.000338 ***
## active_warps
##      1.39132     0.11745   11.846 < 2e-16 ***
## multiprocessor_activity
##      5.04986     0.64314    7.852 5.64e-14 ***
## achieved_occupancy
##     -3.96548     1.71747   -2.309 0.021558 *
## issued_load.store_instructions
##     -0.29724     0.06625   -4.487 9.97e-06 ***

```

```

## max_clock_rate          -0.27365      0.04303  -6.359 6.68e-10 ***
## theoretical_flops       -0.71428      0.01396 -51.181 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1022 on 334 degrees of freedom
## Multiple R-squared:  0.9797, Adjusted R-squared:  0.9793
## F-statistic: 2306 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.16614 -0.07673 -0.01946  0.09064  0.20215
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      6.26951     5.86282   1.069  0.2857
## load.store_instructions  2.16947     0.18422  11.776 <2e-16 ***
## active_warps      -3.16675     0.34180  -9.265 <2e-16 ***
## multiprocessor_activity -0.52498     0.94833  -0.554  0.5802
## achieved_occupancy    4.78893     1.94495   2.462  0.0143 *
## issued_load.store_instructions  1.93466     0.17015  11.370 <2e-16 ***
## max_clock_rate      -1.79614     0.13314 -13.491 <2e-16 ***
## theoretical_flops     -0.75451     0.01308 -57.666 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08941 on 334 degrees of freedom
## Multiple R-squared:  0.9844, Adjusted R-squared:  0.9841
## F-statistic: 3020 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnnp_adjust_weights_cuda GPU= Quadro threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.209835 -0.072898  0.003518  0.074651  0.296193
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -42.17184     2.67960 -15.738 < 2e-16 ***
## load.store_instructions  0.32200     0.06503   4.952 1.17e-06 ***
## active_warps      0.24561     0.13684   1.795  0.07357 .
## multiprocessor_activity  4.81521     0.64905   7.419 9.85e-13 ***
## achieved_occupancy   -2.53579     1.80368  -1.406  0.16068
## issued_load.store_instructions  0.27083     0.08393   3.227  0.00138 **
## max_clock_rate     -0.28145     0.04355  -6.463 3.63e-10 ***
## theoretical_flops     -0.70769     0.01419 -49.886 < 2e-16 ***

```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1023 on 334 degrees of freedom
## Multiple R-squared:  0.9798, Adjusted R-squared:  0.9794
## F-statistic: 2317 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnn_adjust_weights_cuda GPU= GTX-750 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.082370 -0.023675  0.004885  0.019153  0.084757
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -23.064330   0.972669  -23.712   <2e-16 ***
## load.store_instructions    1.405168   0.032346   43.441   <2e-16 ***
## active_warps      0.531033   0.036788   14.435   <2e-16 ***
## multiprocessor_activity  -1.068884   0.238287   -4.486    1e-05 ***
## achieved_occupancy   -0.465892   0.617810   -0.754    0.451
## issued_load.store_instructions -0.920067   0.025960  -35.442   <2e-16 ***
## max_clock_rate     -0.007684   0.014698   -0.523    0.601
## theoretical_flops      0.596844   0.025012   23.862   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03534 on 334 degrees of freedom
## Multiple R-squared:  0.9961, Adjusted R-squared:  0.996
## F-statistic: 1.217e+04 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpnn_adjust_weights_cuda GPU= GTX-980 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.097589 -0.026405  0.004075  0.021356  0.093432
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -26.160242   1.186375  -22.051   < 2e-16 ***
## load.store_instructions  -0.012110   0.023094   -0.524    0.600
## active_warps      1.340157   0.043738   30.641   < 2e-16 ***
## multiprocessor_activity  -1.159944   0.289348   -4.009  7.53e-05 ***
## achieved_occupancy   -0.229968   0.740943   -0.310    0.756
## issued_load.store_instructions -0.311573   0.026906  -11.580   < 2e-16 ***
## max_clock_rate      0.276633   0.019697   14.044   < 2e-16 ***
## theoretical_flops    -0.728375   0.005675 -128.356   < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

```
##
## Residual standard error: 0.04188 on 334 degrees of freedom
## Multiple R-squared:  0.9964, Adjusted R-squared:  0.9963
## F-statistic: 1.318e+04 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= bpn adjust_weights_cuda GPU= GTX-970 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.034139 -0.006010  0.000050  0.005489  0.042000
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.967e+01  2.656e-01 -111.701 < 2e-16 ***
## load.store_instructions    1.163e-01  5.306e-03   21.918 < 2e-16 ***
## active_warps      1.534e+00  1.023e-02  149.930 < 2e-16 ***
## multiprocessor_activity   -3.238e-01  6.417e-02   -5.046 7.42e-07 ***
## achieved_occupancy    -1.751e+00  1.691e-01  -10.355 < 2e-16 ***
## issued_load.store_instructions  -6.444e-01  6.560e-03  -98.231 < 2e-16 ***
## max_clock_rate      6.128e-04  3.983e-03    0.154  0.878
## theoretical_flops    -9.754e-01  1.732e-03 -563.019 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.009624 on 334 degrees of freedom
## Multiple R-squared:  0.9998, Adjusted R-squared:  0.9998
## F-statistic: 2.619e+05 on 7 and 334 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan1 GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.61793 -0.08646 -0.00120  0.09249  0.40717
##
## Coefficients:
##              Estimate Std. Error
## (Intercept)    -17.723216  1.359589
## active_warps      0.266305  0.042306
## issue_slots      0.186556  0.074967
## inst_issued2    -1.684846  0.209110
## executed_ipc    -0.104566  0.050739
## issue_slot_utilization -0.188789  0.046164
## device_memory_read_transactions -0.004462  0.002789
## system_memory_write_throughput -0.020405  0.009283
## executed_control_flow_instructions  1.007630  0.099324
## floating_point_operations.single_precision_add. -0.027921  0.002578
## misc_instructions  0.397538  0.130144
## max_clock_rate    0.205729  0.159428
```

```

## theoretical_flops -0.121888 0.012284
## t value Pr(>|t|)
## (Intercept) -13.036 < 2e-16 ***
## active_warps 6.295 6.03e-10 ***
## issue_slots 2.489 0.01310 *
## inst_issued2 -8.057 4.38e-15 ***
## executed_ipc -2.061 0.03976 *
## issue_slot_utilization -4.090 4.93e-05 ***
## device_memory_read_transactions -1.600 0.11019
## system_memory_write_throughput -2.198 0.02832 *
## executed_control.flow_instructions 10.145 < 2e-16 ***
## floating_point_operations.single_precision_add. -10.829 < 2e-16 ***
## misc_instructions 3.055 0.00236 **
## max_clock_rate 1.290 0.19741
## theoretical_flops -9.923 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1521 on 587 degrees of freedom
## Multiple R-squared: 0.9004, Adjusted R-squared: 0.8983
## F-statistic: 442.1 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan1 GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
## Min 1Q Median 3Q Max
## -0.67333 -0.08105 0.00086 0.09763 0.43749
##
## Coefficients:
## Estimate Std. Error
## (Intercept) -16.119192 1.128111
## active_warps 0.288273 0.043053
## issue_slots 0.654979 0.065484
## inst_issued2 -1.897780 0.212478
## executed_ipc -0.078036 0.050299
## issue_slot_utilization -0.287880 0.049128
## device_memory_read_transactions -0.005907 0.002868
## system_memory_write_throughput -0.028742 0.009851
## executed_control.flow_instructions 0.586505 0.069051
## floating_point_operations.single_precision_add. -0.018010 0.001674
## misc_instructions 0.526079 0.130215
## max_clock_rate -0.216615 0.105576
## theoretical_flops -0.121282 0.012537
## t value Pr(>|t|)
## (Intercept) -14.289 < 2e-16 ***
## active_warps 6.696 5.03e-11 ***
## issue_slots 10.002 < 2e-16 ***
## inst_issued2 -8.932 < 2e-16 ***
## executed_ipc -1.551 0.12133
## issue_slot_utilization -5.860 7.73e-09 ***
## device_memory_read_transactions -2.059 0.03992 *

```

```

## system_memory_write_throughput          -2.918  0.00366 **
## executed_control.flow_instructions        8.494  < 2e-16 ***
## floating_point_operations.single_precision_add. -10.761  < 2e-16 ***
## misc_instructions                        4.040  6.05e-05 ***
## max_clock_rate                         -2.052  0.04064 *
## theoretical_flops                       -9.674  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1559 on 587 degrees of freedom
## Multiple R-squared:  0.905, Adjusted R-squared:  0.903
## F-statistic: 465.7 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan1 GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.65842 -0.08853 -0.00658  0.09804  0.45351
##
## Coefficients:
##
##              Estimate Std. Error
## (Intercept)    -12.573528   1.058438
## active_warps      0.281803   0.043514
## issue_slots       0.517341   0.064739
## inst_issued2     -1.489632   0.252933
## executed_ipc      -0.081176   0.050262
## issue_slot_utilization -0.256472   0.048710
## device_memory_read_transactions -0.005005   0.002930
## system_memory_write_throughput -0.038189   0.010209
## executed_control.flow_instructions  0.563355   0.086557
## floating_point_operations.single_precision_add. -0.014923   0.001862
## misc_instructions  0.287001   0.154910
## max_clock_rate    -0.571044   0.109646
## theoretical_flops  -0.113092   0.012760
##
##              t value Pr(>|t|)
## (Intercept)    -11.879  < 2e-16 ***
## active_warps      6.476 1.99e-10 ***
## issue_slots       7.991 7.11e-15 ***
## inst_issued2     -5.889 6.53e-09 ***
## executed_ipc      -1.615 0.106835
## issue_slot_utilization -5.265 1.97e-07 ***
## device_memory_read_transactions -1.708 0.088077 .
## system_memory_write_throughput  -3.741 0.000202 ***
## executed_control.flow_instructions  6.508 1.63e-10 ***
## floating_point_operations.single_precision_add. -8.013 6.06e-15 ***
## misc_instructions  1.853 0.064428 .
## max_clock_rate    -5.208 2.64e-07 ***
## theoretical_flops  -8.863  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```

```

## Residual standard error: 0.1602 on 587 degrees of freedom
## Multiple R-squared:  0.8981, Adjusted R-squared:  0.896
## F-statistic: 431.1 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan1  GPU= Quadro  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.68601 -0.08073 -0.00017  0.09946  0.44620
##
## Coefficients:
##                                     Estimate Std. Error
## (Intercept)                    -14.553014    1.246763
## active_warps                     0.324589    0.043180
## issue_slots                     0.583318    0.079574
## inst_issued2                   -1.432920    0.207933
## executed_ipc                   -0.060928    0.051027
## issue_slot_utilization          -0.276401    0.048510
## device_memory_read_transactions -0.005317    0.002920
## system_memory_write_throughput  -0.031105    0.009959
## executed_control.flow.instructions 0.424862    0.071640
## floating_point_operations.single_precision_add. -0.016212    0.001704
## misc_instructions                0.251692    0.126047
## max_clock_rate                 -0.320381    0.118974
## theoretical_flops              -0.109833    0.012649
##
##                                     t value Pr(>|t|)
## (Intercept)                    -11.673 < 2e-16 ***
## active_warps                     7.517 2.11e-13 ***
## issue_slots                     7.330 7.64e-13 ***
## inst_issued2                   -6.891 1.43e-11 ***
## executed_ipc                   -1.194 0.23295
## issue_slot_utilization          -5.698 1.92e-08 ***
## device_memory_read_transactions -1.821 0.06918 .
## system_memory_write_throughput  -3.123 0.00188 **
## executed_control.flow.instructions 5.930 5.16e-09 ***
## floating_point_operations.single_precision_add. -9.517 < 2e-16 ***
## misc_instructions                1.997 0.04631 *
## max_clock_rate                 -2.693 0.00729 **
## theoretical_flops              -8.683 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1588 on 587 degrees of freedom
## Multiple R-squared:  0.8915, Adjusted R-squared:  0.8893
## F-statistic: 401.8 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan1  GPU= GTX-750  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##

```

```

## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.61039 -0.07819 -0.00263  0.07783  0.39363
##
## Coefficients:
##                                Estimate Std. Error
## (Intercept)                  -15.679377    1.186058
## active_warps                   0.109822    0.042404
## issue_slots                   0.767749    0.064220
## inst_issued2                  -1.483342    0.187209
## executed_ipc                  -0.131074    0.044190
## issue_slot_utilization        -0.295797    0.043258
## device_memory_read_transactions -0.001150    0.002423
## system_memory_write_throughput -0.021485    0.007162
## executed_control.flow.instructions 0.358635    0.055730
## floating_point_operations.single_precision_add. -0.017859    0.002377
## misc_instructions              0.351630    0.114148
## max_clock_rate                -0.056480    0.119949
## theoretical_flops              0.032642    0.073019
##                                t value Pr(>|t|)
## (Intercept)                  -13.220 < 2e-16 ***
## active_warps                   2.590  0.00984 **
## issue_slots                   11.955 < 2e-16 ***
## inst_issued2                  -7.923  1.17e-14 ***
## executed_ipc                  -2.966  0.00314 **
## issue_slot_utilization        -6.838  2.02e-11 ***
## device_memory_read_transactions -0.475  0.63516
## system_memory_write_throughput -3.000  0.00282 **
## executed_control.flow.instructions 6.435  2.56e-10 ***
## floating_point_operations.single_precision_add. -7.512  2.18e-13 ***
## misc_instructions              3.080  0.00216 **
## max_clock_rate                -0.471  0.63791
## theoretical_flops              0.447  0.65502
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1316 on 587 degrees of freedom
## Multiple R-squared:  0.9204, Adjusted R-squared:  0.9188
## F-statistic: 565.7 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan1  GPU= GTX-980  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.74894 -0.07623  0.00380  0.08236  0.39102
##
## Coefficients:
##                                Estimate Std. Error
## (Intercept)                  -16.947921    1.539951
## active_warps                   0.431500    0.040968
## issue_slots                   0.336863    0.065661

```



```

## inst_issued2                -0.912514    0.169716
## executed_ipc                -0.136307    0.050988
## issue_slot_utilization      -0.322824    0.046921
## device_memory_read_transactions 0.119634    0.020950
## system_memory_write_throughput -0.018908    0.007529
## executed_control.flow.instructions 0.099328    0.083110
## floating_point_operations.single_precision_add. -0.019966    0.001910
## misc_instructions           0.072056    0.107155
## max_clock_rate              0.034319    0.174001
## theoretical_flops           -0.113082    0.012521
##                               t value Pr(>|t|)
## (Intercept)                -11.005 < 2e-16 ***
## active_warps                10.533 < 2e-16 ***
## issue_slots                  5.130 3.94e-07 ***
## inst_issued2               -5.377 1.10e-07 ***
## executed_ipc               -2.673 0.00772 **
## issue_slot_utilization     -6.880 1.54e-11 ***
## device_memory_read_transactions 5.710 1.79e-08 ***
## system_memory_write_throughput -2.511 0.01229 *
## executed_control.flow.instructions 1.195 0.23251
## floating_point_operations.single_precision_add. -10.452 < 2e-16 ***
## misc_instructions           0.672 0.50156
## max_clock_rate              0.197 0.84371
## theoretical_flops           -9.031 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1377 on 587 degrees of freedom
## Multiple R-squared:  0.9121, Adjusted R-squared:  0.9103
## F-statistic: 507.5 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan1 GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.64457 -0.08369  0.00576  0.09794  0.41389
##
## Coefficients:
##                               Estimate Std. Error
## (Intercept)                -1.013e+01  1.262e+00
## active_warps                 3.088e-01  4.628e-02
## issue_slots                  3.306e-01  7.442e-02
## inst_issued2                -1.000e+00  1.919e-01
## executed_ipc                -1.879e-01  6.209e-02
## issue_slot_utilization     -2.268e-01  5.455e-02
## device_memory_read_transactions -6.634e-03  2.924e-03
## system_memory_write_throughput -2.487e-02  8.642e-03
## executed_control.flow.instructions 5.291e-01  7.161e-02
## floating_point_operations.single_precision_add. -1.001e-02  2.080e-03
## misc_instructions           3.552e-04  1.169e-01
## max_clock_rate              -7.879e-01  1.322e-01

```

```

## theoretical_flops -5.795e-02 1.700e-02
## t value Pr(>|t|)
## (Intercept) -8.025 5.55e-15 ***
## active_warps 6.673 5.82e-11 ***
## issue_slots 4.442 1.07e-05 ***
## inst_issued2 -5.212 2.59e-07 ***
## executed_ipc -3.027 0.002580 **
## issue_slot_utilization -4.158 3.68e-05 ***
## device_memory_read_transactions -2.269 0.023635 *
## system_memory_write_throughput -2.878 0.004151 **
## executed_control_flow_instructions 7.389 5.11e-13 ***
## floating_point_operations.single_precision_add. -4.811 1.91e-06 ***
## misc_instructions 0.003 0.997576
## max_clock_rate -5.958 4.40e-09 ***
## theoretical_flops -3.409 0.000696 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1589 on 587 degrees of freedom
## Multiple R-squared: 0.887, Adjusted R-squared: 0.8847
## F-statistic: 383.9 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan1 GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.06782 -0.09309  0.00692  0.13075  0.62745
##
## Coefficients:
##
##              Estimate Std. Error
## (Intercept) -12.960068   1.441496
## active_warps  0.329584   0.015240
## executed_ipc -0.215981   0.061271
## issue_slot_utilization  0.101606   0.047733
## system_memory_write_throughput -0.048682   0.013399
## floating_point_operations.single_precision_add. -0.005381   0.002528
## max_clock_rate -0.587071   0.204230
## theoretical_flops -0.111562   0.016722
## t value Pr(>|t|)
## (Intercept) -8.991 < 2e-16 ***
## active_warps 21.626 < 2e-16 ***
## executed_ipc -3.525 0.000456 ***
## issue_slot_utilization  2.129 0.033697 *
## system_memory_write_throughput -3.633 0.000304 ***
## floating_point_operations.single_precision_add. -2.128 0.033731 *
## max_clock_rate -2.875 0.004191 **
## theoretical_flops -6.672 5.81e-11 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2219 on 592 degrees of freedom

```

```

## Multiple R-squared:  0.7863, Adjusted R-squared:  0.7838
## F-statistic: 311.2 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan1  GPU= Tesla-K40  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.03641 -0.10015  0.00889  0.12817  0.69474
##
## Coefficients:
##                                     Estimate Std. Error
## (Intercept)                     -14.707684    0.543483
## active_warps                      0.347821    0.015089
## executed_ipc                     -0.305339    0.059319
## issue_slot_utilization            0.084551    0.050606
## system_memory_write_throughput   -0.063234    0.013975
## floating_point_operations.single_precision_add. -0.006859    0.001207
## max_clock_rate                   -0.375193    0.076011
## theoretical_flops                 -0.112098    0.016949
##                                     t value Pr(>|t|)
## (Intercept)                     -27.062  < 2e-16 ***
## active_warps                      23.051  < 2e-16 ***
## executed_ipc                     -5.147 3.60e-07 ***
## issue_slot_utilization            1.671  0.0953 .
## system_memory_write_throughput   -4.525 7.31e-06 ***
## floating_point_operations.single_precision_add. -5.682 2.09e-08 ***
## max_clock_rate                   -4.936 1.04e-06 ***
## theoretical_flops                 -6.614 8.39e-11 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2246 on 592 degrees of freedom
## Multiple R-squared:  0.8011, Adjusted R-squared:  0.7987
## F-statistic: 340.6 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan1  GPU= Tesla-K20  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.04225 -0.10167  0.01203  0.12988  0.66678
##
## Coefficients:
##                                     Estimate Std. Error
## (Intercept)                     -14.980694    0.592283
## active_warps                      0.338572    0.014693
## executed_ipc                     -0.346744    0.057885
## issue_slot_utilization            0.126793    0.049059
## system_memory_write_throughput   -0.073261    0.014025

```

```

## floating_point_operations.single_precision_add. -0.006067 0.001175
## max_clock_rate -0.335085 0.082737
## theoretical_flops -0.108286 0.016779
## t value Pr(>|t|)
## (Intercept) -25.293 < 2e-16 ***
## active_warps 23.043 < 2e-16 ***
## executed_ipc -5.990 3.64e-09 ***
## issue_slot_utilization 2.585 0.00999 **
## system_memory_write_throughput -5.224 2.43e-07 ***
## floating_point_operations.single_precision_add. -5.163 3.33e-07 ***
## max_clock_rate -4.050 5.80e-05 ***
## theoretical_flops -6.453 2.28e-10 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2241 on 592 degrees of freedom
## Multiple R-squared: 0.7989, Adjusted R-squared: 0.7965
## F-statistic: 335.9 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan1 GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
## Min 1Q Median 3Q Max
## -1.04148 -0.09506 0.00543 0.11941 0.69502
##
## Coefficients:
## Estimate Std. Error
## (Intercept) -14.321584 0.512436
## active_warps 0.346816 0.014553
## executed_ipc -0.274374 0.063212
## issue_slot_utilization 0.052594 0.050554
## system_memory_write_throughput -0.055579 0.013488
## floating_point_operations.single_precision_add. -0.007636 0.001227
## max_clock_rate -0.417151 0.072871
## theoretical_flops -0.112137 0.016305
## t value Pr(>|t|)
## (Intercept) -27.948 < 2e-16 ***
## active_warps 23.831 < 2e-16 ***
## executed_ipc -4.341 1.67e-05 ***
## issue_slot_utilization 1.040 0.299
## system_memory_write_throughput -4.121 4.32e-05 ***
## floating_point_operations.single_precision_add. -6.222 9.31e-10 ***
## max_clock_rate -5.725 1.65e-08 ***
## theoretical_flops -6.878 1.55e-11 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2179 on 592 degrees of freedom
## Multiple R-squared: 0.7938, Adjusted R-squared: 0.7914
## F-statistic: 325.6 on 7 and 592 DF, p-value: < 2.2e-16
##

```

```
## [1] "kernel= Fan1 GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.07340 -0.09335  0.01010  0.10862  0.46494
##
## Coefficients:
##                                     Estimate Std. Error
## (Intercept)                    -13.881350    0.524128
## active_warps                     0.267904    0.013343
## executed_ipc                    -0.414473    0.049619
## issue_slot_utilization           0.278968    0.041905
## system_memory_write_throughput  -0.038050    0.010199
## floating_point_operations.single_precision_add. -0.001361    0.001601
## max_clock_rate                  -0.449589    0.076240
## theoretical_flops               -0.310858    0.083077
##                                     t value Pr(>|t|)
## (Intercept)                    -26.485 < 2e-16 ***
## active_warps                     20.078 < 2e-16 ***
## executed_ipc                    -8.353 4.73e-16 ***
## issue_slot_utilization           6.657 6.37e-11 ***
## system_memory_write_throughput  -3.731 0.000209 ***
## floating_point_operations.single_precision_add. -0.850 0.395545
## max_clock_rate                  -5.897 6.22e-09 ***
## theoretical_flops               -3.742 0.000200 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1892 on 592 degrees of freedom
## Multiple R-squared:  0.8341, Adjusted R-squared:  0.8322
## F-statistic: 425.3 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan1 GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.99951 -0.08857  0.01220  0.11439  0.53745
##
## Coefficients:
##                                     Estimate Std. Error
## (Intercept)                    -13.793645    0.476499
## active_warps                     0.347362    0.013883
## executed_ipc                    -0.442666    0.053420
## issue_slot_utilization           0.050964    0.044359
## system_memory_write_throughput  -0.040563    0.010696
## floating_point_operations.single_precision_add. -0.006571    0.001074
## max_clock_rate                  -0.543002    0.069026
## theoretical_flops               -0.136238    0.016108
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##                                     t value Pr(>|t|)
## (Intercept)                        -28.948 < 2e-16 ***
## active_warps                       25.021 < 2e-16 ***
## executed_ipc                       -8.287 7.83e-16 ***
## issue_slot_utilization              1.149 0.251062
## system_memory_write_throughput     -3.792 0.000165 ***
## floating_point_operations.single_precision_add. -6.118 1.72e-09 ***
## max_clock_rate                     -7.867 1.74e-14 ***
## theoretical_flops                   -8.458 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1983 on 592 degrees of freedom
## Multiple R-squared:  0.8162, Adjusted R-squared:  0.8141
## F-statistic: 375.7 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan1 GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.13651 -0.09545  0.01015  0.12180  0.63120
##
## Coefficients:
##                                     Estimate Std. Error
## (Intercept)                       -13.963065   0.503356
## active_warps                        0.314414   0.014438
## executed_ipc                       -0.502826   0.058309
## issue_slot_utilization              0.157453   0.047252
## system_memory_write_throughput     -0.041735   0.011433
## floating_point_operations.single_precision_add. -0.003268   0.001210
## max_clock_rate                     -0.488319   0.071358
## theoretical_flops                   -0.074909   0.020309
##                                     t value Pr(>|t|)
## (Intercept)                        -27.740 < 2e-16 ***
## active_warps                       21.776 < 2e-16 ***
## executed_ipc                       -8.624 < 2e-16 ***
## issue_slot_utilization              3.332 0.000915 ***
## system_memory_write_throughput     -3.650 0.000285 ***
## floating_point_operations.single_precision_add. -2.701 0.007120 **
## max_clock_rate                     -6.843 1.94e-11 ***
## theoretical_flops                   -3.688 0.000246 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.212 on 592 degrees of freedom
## Multiple R-squared:  0.7972, Adjusted R-squared:  0.7948
## F-statistic: 332.4 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:

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## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.289673 -0.030124  0.003777  0.029204  0.215445
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -40.210148   1.672968  -24.035 < 2e-16
## sm_cta_launched    -0.937496   0.170524   -5.498 5.74e-08
## elapsed_cycles_sm     0.916920   0.011117   82.480 < 2e-16
## load.store_instructions  0.050081   0.005362    9.341 < 2e-16
## integer_instructions   2.500299   0.077871   32.108 < 2e-16
## inst_issued2         0.501325   0.077321    6.484 1.90e-10
## device_memory_read_transactions  0.004376   0.001102    3.971 8.05e-05
## system_memory_write_throughput -0.005763   0.002984   -1.932  0.0539
## executed_control.flow_instructions -7.438620   0.268210  -27.734 < 2e-16
## issued_load.store_instructions -0.027553   0.005406   -5.097 4.67e-07
## misc_instructions     5.423893   0.398749   13.602 < 2e-16
## max_clock_rate      -2.443179   0.049935  -48.927 < 2e-16
## theoretical_flops    -0.800239   0.004333 -184.671 < 2e-16
##
## (Intercept)          ***
## sm_cta_launched      ***
## elapsed_cycles_sm     ***
## load.store_instructions ***
## integer_instructions  ***
## inst_issued2         ***
## device_memory_read_transactions ***
## system_memory_write_throughput .
## executed_control.flow_instructions ***
## issued_load.store_instructions ***
## misc_instructions     ***
## max_clock_rate       ***
## theoretical_flops    ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04723 on 587 degrees of freedom
## Multiple R-squared:  0.9981, Adjusted R-squared:  0.998
## F-statistic: 2.51e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2  GPU= Tesla-K40  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.247145 -0.052202 -0.008667  0.059834  0.291622
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -8.882805   1.328757   -6.685 5.38e-11

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## sm_cta_launched          0.658215    0.189584    3.472 0.000555
## elapsed_cycles_sm        0.817344    0.016195   50.470 < 2e-16
## load.store_instructions  -0.055535    0.007362   -7.543 1.75e-13
## integer_instructions      0.160507    0.052634    3.049 0.002396
## inst_issued2             0.019148    0.106542    0.180 0.857431
## device_memory_read_transactions 0.002146    0.001906    1.126 0.260637
## system_memory_write_throughput -0.013098    0.005133   -2.552 0.010966
## executed_control.flow_instructions 0.752228    0.027100   27.758 < 2e-16
## issued_load.store_instructions 0.066147    0.007649    8.648 < 2e-16
## misc_instructions        -1.430525    0.342833   -4.173 3.47e-05
## max_clock_rate           -1.286100    0.060512  -21.254 < 2e-16
## theoretical_flops        -0.802474    0.007497 -107.040 < 2e-16
##
## (Intercept)              ***
## sm_cta_launched          ***
## elapsed_cycles_sm        ***
## load.store_instructions   ***
## integer_instructions      **
## inst_issued2
## device_memory_read_transactions
## system_memory_write_throughput *
## executed_control.flow_instructions ***
## issued_load.store_instructions ***
## misc_instructions         ***
## max_clock_rate           ***
## theoretical_flops         ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08153 on 587 degrees of freedom
## Multiple R-squared:  0.9947, Adjusted R-squared:  0.9946
## F-statistic: 9255 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.243945 -0.051475 -0.007502  0.055983  0.301615
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -6.686153   1.384075  -4.831 1.74e-06
## sm_cta_launched    0.847518   0.191005   4.437 1.09e-05
## elapsed_cycles_sm    0.825580   0.017096  48.291 < 2e-16
## load.store_instructions -0.043006   0.013582  -3.166 0.00162
## integer_instructions    0.217781   0.052709   4.132 4.12e-05
## inst_issued2     0.086412   0.103348   0.836 0.40342
## device_memory_read_transactions -0.010734   0.012911  -0.831 0.40609
## system_memory_write_throughput -0.011022   0.005062  -2.177 0.02985
## executed_control.flow_instructions 0.792476   0.028851  27.468 < 2e-16
## issued_load.store_instructions    0.067318   0.007389   9.111 < 2e-16

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## misc_instructions          -1.793441    0.345541   -5.190 2.90e-07
## max_clock_rate            -1.436798    0.066304  -21.670 < 2e-16
## theoretical_flops         -0.804340    0.007352 -109.403 < 2e-16
##
## (Intercept)               ***
## sm_cta_launched           ***
## elapsed_cycles_sm         ***
## load.store_instructions    **
## integer_instructions       ***
## inst_issued2
## device_memory_read_transactions
## system_memory_write_throughput *
## executed_control.flow_instructions ***
## issued_load.store_instructions ***
## misc_instructions          ***
## max_clock_rate             ***
## theoretical_flops          ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07988 on 587 degrees of freedom
## Multiple R-squared:  0.9946, Adjusted R-squared:  0.9945
## F-statistic: 9073 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.224313 -0.050494 -0.000755  0.053311  0.265840
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -3.270565    1.347266  -2.428  0.0155
## sm_cta_launched    1.521489    0.192587   7.900 1.38e-14
## elapsed_cycles_sm    0.735354    0.016135  45.575 < 2e-16
## load.store_instructions -0.033446    0.006847  -4.885 1.34e-06
## integer_instructions    0.372095    0.052680   7.063 4.62e-12
## inst_issued2    0.484606    0.104549   4.635 4.40e-06
## device_memory_read_transactions 0.001321    0.001697   0.779  0.4366
## system_memory_write_throughput -0.014204    0.004554  -3.119  0.0019
## executed_control.flow_instructions 0.767780    0.024819  30.935 < 2e-16
## issued_load.store_instructions    0.045855    0.007029   6.524 1.48e-10
## misc_instructions   -2.904542    0.345219  -8.414 3.04e-16
## max_clock_rate     -1.345314    0.053165 -25.305 < 2e-16
## theoretical_flops   -0.789932    0.006737 -117.254 < 2e-16
##
## (Intercept) *
## sm_cta_launched ***
## elapsed_cycles_sm ***
## load.store_instructions ***
## integer_instructions ***

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## inst_issued2 ***
## device_memory_read_transactions
## system_memory_write_throughput **
## executed_control.flow_instructions ***
## issued_load.store_instructions ***
## misc_instructions ***
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07256 on 587 degrees of freedom
## Multiple R-squared:  0.9954, Adjusted R-squared:  0.9953
## F-statistic: 1.062e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= GTX-750 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.248828 -0.039670  0.003582  0.036746  0.224754
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.483e+01  8.185e-01 -18.123 < 2e-16
## sm_cta_launched -3.238e-01  1.171e-01  -2.765  0.00588
## elapsed_cycles_sm  8.466e-01  8.891e-03  95.228 < 2e-16
## load.store_instructions -4.326e-02  5.028e-03  -8.605 < 2e-16
## integer_instructions -3.081e-01  3.524e-02  -8.742 < 2e-16
## inst_issued2    -2.934e-01  6.340e-02  -4.627  4.56e-06
## device_memory_read_transactions  1.933e-03  1.200e-03   1.611  0.10765
## system_memory_write_throughput  6.017e-04  2.836e-03   0.212  0.83206
## executed_control.flow_instructions  8.531e-01  1.697e-02  50.285 < 2e-16
## issued_load.store_instructions  3.315e-02  5.041e-03   6.576  1.07e-10
## misc_instructions  2.384e-01  2.108e-01   1.131  0.25858
## max_clock_rate    -1.120e+00  3.775e-02 -29.684 < 2e-16
## theoretical_flops -2.479e-01  2.011e-02 -12.330 < 2e-16
##
## (Intercept) ***
## sm_cta_launched **
## elapsed_cycles_sm ***
## load.store_instructions ***
## integer_instructions ***
## inst_issued2 ***
## device_memory_read_transactions
## system_memory_write_throughput
## executed_control.flow_instructions ***
## issued_load.store_instructions ***
## misc_instructions
## max_clock_rate ***
## theoretical_flops ***
## ---

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## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0515 on 587 degrees of freedom
## Multiple R-squared:  0.9978, Adjusted R-squared:  0.9978
## F-statistic: 2.263e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2  GPU= GTX-980  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.275229 -0.020347  0.006399  0.027524  0.162982
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.168e+01  7.662e-01  -28.293 < 2e-16
## sm_cta_launched -3.110e-01  1.005e-01   -3.093 0.002078
## elapsed_cycles_sm  8.342e-01  7.648e-03 109.083 < 2e-16
## load.store_instructions -3.259e-02  4.322e-03   -7.541 1.78e-13
## integer_instructions -1.481e-01  2.823e-02   -5.244 2.20e-07
## inst_issued2    -2.000e-01  5.458e-02   -3.664 0.000271
## device_memory_read_transactions  2.849e-03  1.032e-03    2.761 0.005949
## system_memory_write_throughput  7.237e-04  2.442e-03    0.296 0.767065
## executed_control.flow_instructions 3.811e-01  1.839e-02  20.721 < 2e-16
## issued_load.store_instructions  2.372e-02  4.350e-03    5.454 7.26e-08
## misc_instructions  4.520e-01  1.825e-01    2.477 0.013514
## max_clock_rate    -3.626e-01  4.233e-02   -8.566 < 2e-16
## theoretical_flops -7.560e-01  4.110e-03 -183.912 < 2e-16
##
## (Intercept)      ***
## sm_cta_launched    **
## elapsed_cycles_sm  ***
## load.store_instructions ***
## integer_instructions ***
## inst_issued2      ***
## device_memory_read_transactions **
## system_memory_write_throughput
## executed_control.flow_instructions ***
## issued_load.store_instructions ***
## misc_instructions  *
## max_clock_rate     ***
## theoretical_flops  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04438 on 587 degrees of freedom
## Multiple R-squared:  0.9984, Adjusted R-squared:  0.9983
## F-statistic: 2.998e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2  GPU= GTX-970  threshCorr= 0.5  numberFeatures= 10"
##
## Call:

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## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.164821 -0.016971  0.009029  0.023461  0.147969
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.052e+01  6.807e-01  -30.148 < 2e-16
## sm_cta_launched -5.036e-01  9.425e-02   -5.343 1.31e-07
## elapsed_cycles_sm  8.407e-01  6.969e-03  120.642 < 2e-16
## load.store_instructions -3.342e-02  4.702e-03   -7.107 3.45e-12
## integer_instructions -2.996e-01  2.694e-02  -11.121 < 2e-16
## inst_issued2    -2.614e-01  5.197e-02   -5.031 6.50e-07
## device_memory_read_transactions  3.389e-03  9.395e-04    3.607 0.000336
## system_memory_write_throughput -2.510e-05  2.218e-03   -0.011 0.990976
## executed_control.flow_instructions  4.974e-01  1.616e-02   30.786 < 2e-16
## issued_load.store_instructions  1.962e-02  4.647e-03    4.222 2.81e-05
## misc_instructions  7.396e-01  1.698e-01    4.356 1.56e-05
## max_clock_rate    -6.389e-01  3.621e-02  -17.647 < 2e-16
## theoretical_flops -9.275e-01  4.714e-03 -196.774 < 2e-16
##
## (Intercept)      ***
## sm_cta_launched  ***
## elapsed_cycles_sm ***
## load.store_instructions ***
## integer_instructions ***
## inst_issued2     ***
## device_memory_read_transactions ***
## system_memory_write_throughput ***
## executed_control.flow_instructions ***
## issued_load.store_instructions ***
## misc_instructions ***
## max_clock_rate   ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04033 on 587 degrees of freedom
## Multiple R-squared:  0.9986, Adjusted R-squared:  0.9986
## F-statistic: 3.561e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.259609 -0.053483  0.001127  0.057742  0.300403
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -17.969265  0.213524  -84.156 < 2e-16 ***

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## misc_instructions          0.073136    0.024373    3.001  0.00281 **
## elapsed_cycles_sm         0.789232    0.016098   49.027 < 2e-16 ***
## load.store_instructions   -0.016556    0.003474   -4.766 2.37e-06 ***
## integer_instructions       0.147654    0.018779    7.863 1.79e-14 ***
## system_memory_write_throughput -0.010146  0.005369   -1.890 0.05930 .
## max_clock_rate            -0.860626    0.031019  -27.745 < 2e-16 ***
## theoretical_flops         -0.803802    0.007791 -103.170 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08524 on 592 degrees of freedom
## Multiple R-squared:  0.9936, Adjusted R-squared:  0.9935
## F-statistic: 1.315e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.30810 -0.10453  0.00347  0.09847  0.44297
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -21.433424   0.317540  -67.498 < 2e-16 ***
## misc_instructions    0.324968   0.031632  10.273 < 2e-16 ***
## elapsed_cycles_sm    0.834759   0.021423  38.965 < 2e-16 ***
## load.store_instructions  0.036786   0.005189   7.089 3.86e-12 ***
## integer_instructions  -0.233300   0.024026  -9.710 < 2e-16 ***
## system_memory_write_throughput -0.048115   0.008885  -5.415 8.92e-08 ***
## max_clock_rate     -0.219316   0.040441  -5.423 8.54e-08 ***
## theoretical_flops    -0.783500   0.013079 -59.903 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1441 on 592 degrees of freedom
## Multiple R-squared:  0.9834, Adjusted R-squared:  0.9832
## F-statistic: 5021 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.31750 -0.09581 -0.00377  0.09937  0.43943
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -21.680004   0.329163 -65.864 < 2e-16 ***
## misc_instructions  0.314484   0.031540   9.971 < 2e-16 ***
## elapsed_cycles_sm  0.840297   0.021772  38.596 < 2e-16 ***

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```

## load.store_instructions      0.035941   0.004925   7.298 9.45e-13 ***
## integer_instructions        -0.232426   0.023495  -9.893 < 2e-16 ***
## system_memory_write_throughput -0.050369   0.008866  -5.681 2.10e-08 ***
## max_clock_rate              -0.172360   0.043612  -3.952 8.68e-05 ***
## theoretical_flops           -0.783679   0.012979 -60.379 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1439 on 592 degrees of freedom
## Multiple R-squared:  0.9825, Adjusted R-squared:  0.9822
## F-statistic: 4736 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.30226 -0.07662 -0.01075  0.09655  0.44781
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -21.191268   0.300633  -70.489 < 2e-16 ***
## misc_instructions      0.325479   0.034179   9.523 < 2e-16 ***
## elapsed_cycles_sm      0.853639   0.024583  34.725 < 2e-16 ***
## load.store_instructions  0.038796   0.004992   7.772 3.43e-14 ***
## integer_instructions  -0.250201   0.023078 -10.841 < 2e-16 ***
## system_memory_write_throughput -0.046289   0.008325  -5.560 4.08e-08 ***
## max_clock_rate      -0.259527   0.038651  -6.715 4.43e-11 ***
## theoretical_flops    -0.790640   0.012359 -63.973 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1357 on 592 degrees of freedom
## Multiple R-squared:  0.9838, Adjusted R-squared:  0.9836
## F-statistic: 5147 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.32429 -0.09817  0.00378  0.10871  0.36056
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -21.907905   0.301091 -72.762 < 2e-16 ***
## misc_instructions      0.286840   0.032943   8.707 < 2e-16 ***
## elapsed_cycles_sm      0.826471   0.021784  37.939 < 2e-16 ***
## load.store_instructions  0.026696   0.005489   4.863 1.48e-06 ***
## integer_instructions  -0.163553   0.031466  -5.198 2.78e-07 ***

```

```

## system_memory_write_throughput -0.035912 0.007717 -4.654 4.03e-06 ***
## max_clock_rate -0.199508 0.038403 -5.195 2.82e-07 ***
## theoretical_flops -0.925673 0.038116 -24.286 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1437 on 592 degrees of freedom
## Multiple R-squared: 0.9831, Adjusted R-squared: 0.9829
## F-statistic: 4911 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.29362 -0.06030 -0.00482  0.05868  0.33512
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -24.071337   0.191745 -125.538 < 2e-16 ***
## misc_instructions     0.277564   0.018702  14.842 < 2e-16 ***
## elapsed_cycles_sm     0.907351   0.012579  72.132 < 2e-16 ***
## load.store_instructions 0.031254   0.002912  10.734 < 2e-16 ***
## integer_instructions  -0.218052   0.014318 -15.229 < 2e-16 ***
## system_memory_write_throughput -0.012037 0.004660  -2.583  0.01 *
## max_clock_rate     0.109102   0.024853   4.390 1.34e-05 ***
## theoretical_flops    -0.728882   0.007694 -94.737 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0857 on 592 degrees of freedom
## Multiple R-squared: 0.9939, Adjusted R-squared: 0.9938
## F-statistic: 1.372e+04 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.26350 -0.09091 -0.01625  0.07468  0.53732
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -21.869605   0.254352 -85.982 < 2e-16 ***
## misc_instructions     0.409784   0.027148  15.094 < 2e-16 ***
## elapsed_cycles_sm     0.912961   0.018049  50.584 < 2e-16 ***
## load.store_instructions 0.053987   0.004319  12.500 < 2e-16 ***
## integer_instructions  -0.391195   0.022375 -17.484 < 2e-16 ***
## system_memory_write_throughput -0.029960 0.006515  -4.599 5.2e-06 ***
## max_clock_rate    -0.193071   0.032798  -5.887 6.6e-09 ***

```

```

## theoretical_flops          -0.906922    0.012836 -70.653 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1211 on 592 degrees of freedom
## Multiple R-squared:  0.9875, Adjusted R-squared:  0.9874
## F-statistic: 6696 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= GTX-680 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.245228 -0.023165  0.005021  0.027878  0.171062
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -46.550657    2.538283  -18.339 < 2e-16
## sm_cta_launched    -1.789660    0.205357   -8.715 < 2e-16
## elapsed_cycles_sm     0.795602    0.012113   65.684 < 2e-16
## integer_instructions     2.205687    0.062498   35.292 < 2e-16
## inst_issued2     -0.382802    0.071966   -5.319 1.48e-07
## device_memory_read_transactions  0.005029    0.001037    4.849 1.59e-06
## system_memory_write_throughput -0.002509    0.002894   -0.867  0.3863
## issued_control.flow_instructions  1.211872    0.095171   12.734 < 2e-16
## executed_control.flow_instructions -8.380407    0.404705  -20.707 < 2e-16
## control.flow_instructions    -0.186266    0.099376   -1.874  0.0614
## misc_instructions     7.513578    0.648749   11.582 < 2e-16
## max_clock_rate     -2.386059    0.045959  -51.917 < 2e-16
## theoretical_flops    -0.791540    0.004269 -185.425 < 2e-16
##
## (Intercept)          ***
## sm_cta_launched      ***
## elapsed_cycles_sm     ***
## integer_instructions   ***
## inst_issued2         ***
## device_memory_read_transactions ***
## system_memory_write_throughput
## issued_control.flow_instructions ***
## executed_control.flow_instructions ***
## control.flow_instructions .
## misc_instructions     ***
## max_clock_rate        ***
## theoretical_flops     ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04576 on 587 degrees of freedom
## Multiple R-squared:  0.9982, Adjusted R-squared:  0.9981
## F-statistic: 2.674e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 10"

```



```
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.246044 -0.053472 -0.002079  0.052525  0.247756
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -8.258855    1.123465   -7.351 6.63e-13
## sm_cta_launched    0.603951    0.154478    3.910 0.000103
## elapsed_cycles_sm    0.839032    0.019893   42.178 < 2e-16
## integer_instructions  0.643941    0.050869   12.659 < 2e-16
## inst_issued2    0.383247    0.094802    4.043 5.99e-05
## device_memory_read_transactions  0.006472    0.001688    3.834 0.000140
## system_memory_write_throughput -0.012666    0.004768   -2.657 0.008108
## issued_control.flow_instructions -0.771608    0.122177   -6.316 5.32e-10
## executed_control.flow_instructions  0.860062    0.032451   26.504 < 2e-16
## control.flow_instructions  1.071117    0.092272   11.608 < 2e-16
## misc_instructions    -2.645742    0.257376  -10.280 < 2e-16
## max_clock_rate    -1.415214    0.056054  -25.247 < 2e-16
## theoretical_flops    -0.798897    0.007178 -111.291 < 2e-16
##
## (Intercept)          ***
## sm_cta_launched      ***
## elapsed_cycles_sm     ***
## integer_instructions  ***
## inst_issued2         ***
## device_memory_read_transactions ***
## system_memory_write_throughput **
## issued_control.flow_instructions ***
## executed_control.flow_instructions ***
## control.flow_instructions ***
## misc_instructions     ***
## max_clock_rate        ***
## theoretical_flops     ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07576 on 587 degrees of freedom
## Multiple R-squared:  0.9955, Adjusted R-squared:  0.9954
## F-statistic: 1.073e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.272554 -0.041625 -0.003865  0.042449  0.232954
##
## Coefficients:
```

```

##               Estimate Std. Error  t value Pr(>|t|)
## (Intercept)    -5.767895    1.041095   -5.540 4.57e-08
## sm_cta_launched    0.725054    0.142612    5.084 4.97e-07
## elapsed_cycles_sm    0.901557    0.015279   59.006 < 2e-16
## integer_instructions  1.318615    0.061905   21.301 < 2e-16
## inst_issued2    1.252941    0.101939   12.291 < 2e-16
## device_memory_read_transactions  0.054665    0.004298   12.718 < 2e-16
## system_memory_write_throughput -0.004452    0.004029   -1.105    0.27
## issued_control.flow_instructions -2.687456    0.165978  -16.192 < 2e-16
## executed_control.flow_instructions  1.248395    0.036276   34.414 < 2e-16
## control.flow_instructions  1.711486    0.088345   19.373 < 2e-16
## misc_instructions   -3.528655    0.238614  -14.788 < 2e-16
## max_clock_rate     -2.016785    0.059795  -33.728 < 2e-16
## theoretical_flops   -0.808628    0.005937 -136.211 < 2e-16
##
## (Intercept)      ***
## sm_cta_launched  ***
## elapsed_cycles_sm ***
## integer_instructions ***
## inst_issued2     ***
## device_memory_read_transactions ***
## system_memory_write_throughput ***
## issued_control.flow_instructions ***
## executed_control.flow_instructions ***
## control.flow_instructions ***
## misc_instructions ***
## max_clock_rate   ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06344 on 587 degrees of freedom
## Multiple R-squared:  0.9966, Adjusted R-squared:  0.9965
## F-statistic: 1.441e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Quadro threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.203192 -0.039862  0.006857  0.047531  0.224894
##
## Coefficients:
##               Estimate Std. Error  t value Pr(>|t|)
## (Intercept)    -2.969844    1.069342   -2.777  0.00566
## sm_cta_launched    1.215738    0.146658    8.290 7.76e-16
## elapsed_cycles_sm    0.726123    0.017963   40.423 < 2e-16
## integer_instructions  0.808274    0.050155   16.115 < 2e-16
## inst_issued2    0.587001    0.085945    6.830 2.13e-11
## device_memory_read_transactions  0.006740    0.001466    4.598 5.23e-06
## system_memory_write_throughput -0.010092    0.004083   -2.471  0.01374
## issued_control.flow_instructions -0.641171    0.112801   -5.684 2.07e-08

```

```

## executed_control.flow_instructions  0.929663    0.031284    29.717 < 2e-16
## control.flow_instructions           1.174719    0.087280    13.459 < 2e-16
## misc_instructions                   -3.815723    0.245813   -15.523 < 2e-16
## max_clock_rate                      -1.584214    0.050999   -31.064 < 2e-16
## theoretical_flops                   -0.783108    0.006162  -127.077 < 2e-16
##
## (Intercept)                        **
## sm_cta_launched                    ***
## elapsed_cycles_sm                  ***
## integer_instructions                ***
## inst_issued2                      ***
## device_memory_read_transactions    ***
## system_memory_write_throughput     *
## issued_control.flow_instructions    ***
## executed_control.flow_instructions  ***
## control.flow_instructions           ***
## misc_instructions                   ***
## max_clock_rate                     ***
## theoretical_flops                   ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06506 on 587 degrees of freedom
## Multiple R-squared:  0.9963, Adjusted R-squared:  0.9962
## F-statistic: 1.322e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2  GPU= GTX-750  threshCorr= 0.65  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.279087 -0.030411  0.000371  0.027479  0.244540
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -14.056442    0.707031  -19.881 < 2e-16
## sm_cta_launched   -0.081097    0.096292   -0.842 0.400023
## elapsed_cycles_sm    0.921670    0.011354   81.179 < 2e-16
## integer_instructions  0.043437    0.036534    1.189 0.234944
## inst_issued2      0.291984    0.060893    4.795 2.06e-06
## device_memory_read_transactions  0.003805    0.001054    3.611 0.000332
## system_memory_write_throughput  0.000491    0.002600    0.189 0.850317
## issued_control.flow_instructions -0.939962    0.076364  -12.309 < 2e-16
## executed_control.flow_instructions  0.989761    0.019631   50.419 < 2e-16
## control.flow_instructions  0.307204    0.060045    5.116 4.23e-07
## misc_instructions   -0.532239    0.171094   -3.111 0.001956
## max_clock_rate     -1.197233    0.033681  -35.546 < 2e-16
## theoretical_flops   -0.242052    0.018840  -12.847 < 2e-16
##
## (Intercept)      ***
## sm_cta_launched  ***
## elapsed_cycles_sm

```

```

## integer_instructions
## inst_issued2 ***
## device_memory_read_transactions ***
## system_memory_write_throughput
## issued_control.flow_instructions ***
## executed_control.flow_instructions ***
## control.flow_instructions ***
## misc_instructions **
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04739 on 587 degrees of freedom
## Multiple R-squared:  0.9982, Adjusted R-squared:  0.9981
## F-statistic: 2.675e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= GTX-980 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.313040 -0.013012  0.004995  0.018403  0.172861
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.175e+01  6.009e-01  -36.197 < 2e-16
## sm_cta_launched -2.472e-01  7.412e-02   -3.336 0.000904
## elapsed_cycles_sm  9.145e-01  8.855e-03  103.277 < 2e-16
## integer_instructions  1.977e-01  2.595e-02   7.620 1.02e-13
## inst_issued2    2.986e-01  4.752e-02   6.283 6.48e-10
## device_memory_read_transactions  5.731e-03  8.012e-04   7.153 2.54e-12
## system_memory_write_throughput  9.901e-04  1.983e-03   0.499 0.617827
## issued_control.flow_instructions -9.948e-01  5.990e-02  -16.609 < 2e-16
## executed_control.flow_instructions  5.405e-01  1.612e-02   33.519 < 2e-16
## control.flow_instructions  3.563e-01  4.610e-02   7.730 4.69e-14
## misc_instructions -7.015e-02  1.328e-01   -0.528 0.597414
## max_clock_rate    -4.744e-01  3.295e-02  -14.397 < 2e-16
## theoretical_flops -7.604e-01  3.364e-03 -226.077 < 2e-16
##
## (Intercept) ***
## sm_cta_launched ***
## elapsed_cycles_sm ***
## integer_instructions ***
## inst_issued2 ***
## device_memory_read_transactions ***
## system_memory_write_throughput
## issued_control.flow_instructions ***
## executed_control.flow_instructions ***
## control.flow_instructions ***
## misc_instructions
## max_clock_rate ***

```

```

## theoretical_flops          ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03616 on 587 degrees of freedom
## Multiple R-squared:  0.9989, Adjusted R-squared:  0.9989
## F-statistic: 4.519e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2  GPU= GTX-970  threshCorr= 0.65  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.172917 -0.014705  0.001387  0.022697  0.170031
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.945e+01  5.857e-01  -33.215 < 2e-16
## sm_cta_launched    -3.031e-01  7.543e-02   -4.018 6.62e-05
## elapsed_cycles_sm    9.016e-01  9.040e-03  99.736 < 2e-16
## integer_instructions  -6.445e-03  2.845e-02   -0.227 0.820838
## inst_issued2     1.754e-01  4.779e-02   3.669 0.000265
## device_memory_read_transactions  4.362e-03  8.160e-04   5.346 1.29e-07
## system_memory_write_throughput  -8.353e-04  2.007e-03   -0.416 0.677417
## issued_control.flow_instructions  -7.516e-01  6.048e-02  -12.427 < 2e-16
## executed_control.flow_instructions  6.271e-01  1.594e-02  39.338 < 2e-16
## control.flow_instructions    2.685e-01  4.822e-02   5.567 3.94e-08
## misc_instructions    8.605e-02  1.366e-01   0.630 0.529094
## max_clock_rate    -7.555e-01  2.970e-02  -25.439 < 2e-16
## theoretical_flops    -9.279e-01  4.450e-03 -208.544 < 2e-16
##
## (Intercept)          ***
## sm_cta_launched      ***
## elapsed_cycles_sm     ***
## integer_instructions   ***
## inst_issued2          ***
## device_memory_read_transactions ***
## system_memory_write_throughput ***
## issued_control.flow_instructions ***
## executed_control.flow_instructions ***
## control.flow_instructions ***
## misc_instructions
## max_clock_rate        ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03663 on 587 degrees of freedom
## Multiple R-squared:  0.9989, Adjusted R-squared:  0.9988
## F-statistic: 4.319e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2  GPU= GTX-680  threshCorr= 0.65  numberFeatures= 5"

```

```
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
```

	Min	1Q	Median	3Q	Max
	-0.262506	-0.053474	0.000891	0.054800	0.294841

```
##
## Coefficients:
```

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-18.455569	0.190631	-96.813	< 2e-16
misc_instructions	0.123912	0.022376	5.538	4.61e-08
elapsed_cycles_sm	0.787954	0.016412	48.010	< 2e-16
integer_instructions	0.082395	0.013366	6.165	1.31e-09
device_memory_read_transactions	-0.001605	0.001789	-0.897	0.3701
system_memory_write_throughput	-0.011711	0.005457	-2.146	0.0323
max_clock_rate	-0.776872	0.026566	-29.243	< 2e-16
theoretical_flops	-0.802088	0.007925	-101.207	< 2e-16

```
##
## (Intercept) ***
## misc_instructions ***
## elapsed_cycles_sm ***
## integer_instructions ***
## device_memory_read_transactions
## system_memory_write_throughput *
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0868 on 592 degrees of freedom
## Multiple R-squared:  0.9934, Adjusted R-squared:  0.9933
## F-statistic: 1.268e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
```

	Min	1Q	Median	3Q	Max
	-0.32130	-0.10493	-0.00477	0.09514	0.67961

```
##
## Coefficients:
```

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-20.775309	0.302887	-68.591	< 2e-16 ***
misc_instructions	0.254965	0.028703	8.883	< 2e-16 ***
elapsed_cycles_sm	0.834531	0.021793	38.294	< 2e-16 ***
integer_instructions	-0.153108	0.018299	-8.367	4.26e-16 ***
device_memory_read_transactions	0.016558	0.002844	5.821	9.58e-09 ***
system_memory_write_throughput	-0.049947	0.008989	-5.557	4.16e-08 ***
max_clock_rate	-0.297024	0.037719	-7.875	1.64e-14 ***
theoretical_flops	-0.783182	0.013250	-59.110	< 2e-16 ***

```
##
## ---
```

```

## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.146 on 592 degrees of freedom
## Multiple R-squared:  0.983, Adjusted R-squared:  0.9828
## F-statistic: 4891 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.31100 -0.08748 -0.00290  0.09569  0.45779
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -21.980346    0.315650  -69.635 < 2e-16 ***
## misc_instructions      0.375271    0.031081   12.074 < 2e-16 ***
## elapsed_cycles_sm      0.793164    0.021636   36.660 < 2e-16 ***
## integer_instructions  -0.257540    0.021016  -12.254 < 2e-16 ***
## device_memory_read_transactions  0.047057    0.004450   10.575 < 2e-16 ***
## system_memory_write_throughput -0.045777    0.008506   -5.381 1.07e-07 ***
## max_clock_rate      -0.104669    0.042473   -2.464  0.014 *
## theoretical_flops     -0.780670    0.012434  -62.784 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1378 on 592 degrees of freedom
## Multiple R-squared:  0.9839, Adjusted R-squared:  0.9837
## F-statistic: 5174 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= Quadro threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.31766 -0.07821 -0.01499  0.08706  0.62817
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -20.480706    0.285518  -71.732 < 2e-16 ***
## misc_instructions      0.246162    0.031812   7.738 4.38e-14 ***
## elapsed_cycles_sm      0.856548    0.025106   34.118 < 2e-16 ***
## integer_instructions  -0.160994    0.017434   -9.235 < 2e-16 ***
## device_memory_read_transactions  0.015806    0.002653   5.957 4.42e-09 ***
## system_memory_write_throughput -0.047143    0.008489   -5.554 4.23e-08 ***
## max_clock_rate      -0.346681    0.035965   -9.639 < 2e-16 ***
## theoretical_flops     -0.791927    0.012600  -62.853 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```

```

## Residual standard error: 0.1383 on 592 degrees of freedom
## Multiple R-squared:  0.9832, Adjusted R-squared:  0.983
## F-statistic: 4947 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2  GPU= GTX-750  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.33995 -0.10340  0.00512  0.11727  0.49706
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -21.567393   0.295115  -73.081  < 2e-16 ***
## misc_instructions      0.233793   0.028710   8.143 2.29e-15 ***
## elapsed_cycles_sm      0.816867   0.021888  37.321  < 2e-16 ***
## integer_instructions  -0.093069   0.022735  -4.094 4.84e-05 ***
## device_memory_read_transactions  0.012602   0.002861   4.405 1.26e-05 ***
## system_memory_write_throughput -0.035299   0.007747  -4.557 6.31e-06 ***
## max_clock_rate      -0.242499   0.036184  -6.702 4.80e-11 ***
## theoretical_flops    -0.965632   0.035574 -27.144  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1442 on 592 degrees of freedom
## Multiple R-squared:  0.983, Adjusted R-squared:  0.9828
## F-statistic: 4877 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2  GPU= GTX-980  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.31901 -0.06450 -0.01097  0.06339  0.58405
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -23.539708   0.191649 -122.827  < 2e-16
## misc_instructions      0.216639   0.017724  12.223  < 2e-16
## elapsed_cycles_sm      0.908275   0.013161  69.015  < 2e-16
## integer_instructions  -0.146418   0.011614 -12.607  < 2e-16
## device_memory_read_transactions  0.013332   0.001709   7.803 2.75e-14
## system_memory_write_throughput -0.012148   0.004851  -2.504  0.0125
## max_clock_rate      0.040434   0.024230   1.669  0.0957
## theoretical_flops    -0.730082   0.008007 -91.185  < 2e-16
##
## (Intercept)          ***
## misc_instructions      ***
## elapsed_cycles_sm      ***
## integer_instructions    ***

```



```

## device_memory_read_transactions ***
## system_memory_write_throughput *
## max_clock_rate .
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08919 on 592 degrees of freedom
## Multiple R-squared:  0.9934, Adjusted R-squared:  0.9933
## F-statistic: 1.266e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= Fan2 GPU= GTX-970 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.24993 -0.08868 -0.02278  0.06894  0.92705
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -20.946108   0.254938  -82.162 < 2e-16 ***
## misc_instructions      0.296173   0.025838   11.463 < 2e-16 ***
## elapsed_cycles_sm      0.908214   0.019228   47.233 < 2e-16 ***
## integer_instructions  -0.252068   0.017938  -14.053 < 2e-16 ***
## device_memory_read_transactions  0.021267   0.002478   8.584 < 2e-16 ***
## system_memory_write_throughput -0.031245   0.006907  -4.524 7.34e-06 ***
## max_clock_rate      -0.311825   0.032008  -9.742 < 2e-16 ***
## theoretical_flops    -0.895919   0.013549 -66.127 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1284 on 592 degrees of freedom
## Multiple R-squared:  0.986, Adjusted R-squared:  0.9858
## F-statistic: 5948 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.071855 -0.021667 -0.005667  0.003551  0.252712
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -3.991e+01  1.000e+01  -3.990 7.44e-05
## elapsed_cycles_sm  1.459e-01  1.454e-01   1.004 0.316027
## inst_executed     1.503e+00  3.651e-01   4.116 4.41e-05
## l2_throughput_.reads. -2.710e-02  6.101e-02  -0.444 0.657078
## device_memory_read_throughput  1.683e-01  1.740e-01   0.967 0.333849
## device_memory_write_throughput -4.507e-01  9.888e-02  -4.557 6.30e-06

```

```

## issued_ipc -1.542e-01 1.157e-01 -1.333 0.182977
## shared_memory_load_throughput -2.253e-01 1.022e-01 -2.204 0.027910
## system_memory_write_throughput -2.252e-04 2.774e-04 -0.812 0.417325
## issued_control.flow_instructions 5.396e-01 1.439e-01 3.751 0.000194
## misc_instructions -1.862e-02 5.240e-02 -0.355 0.722482
## max_clock_rate -7.655e-01 1.520e-01 -5.035 6.37e-07
## theoretical_flops -3.499e-01 1.278e-01 -2.737 0.006388
##
## (Intercept) ***
## elapsed_cycles_sm
## inst_executed ***
## l2_throughput_reads.
## device_memory_read_throughput
## device_memory_write_throughput ***
## issued_ipc
## shared_memory_load_throughput *
## system_memory_write_throughput
## issued_control.flow_instructions ***
## misc_instructions
## max_clock_rate ***
## theoretical_flops **
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0424 on 587 degrees of freedom
## Multiple R-squared: 0.9979, Adjusted R-squared: 0.9979
## F-statistic: 2.362e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
## Min 1Q Median 3Q Max
## -0.106767 -0.023468 -0.009086 0.007791 0.256251
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.951e+01 8.424e+00 -2.316 0.020926
## elapsed_cycles_sm -1.941e-01 6.964e-02 -2.788 0.005477
## inst_executed 6.695e-01 2.247e-01 2.979 0.003010
## l2_throughput_reads. -4.925e-02 6.151e-02 -0.801 0.423624
## device_memory_read_throughput -1.257e-01 1.168e-01 -1.077 0.282053
## device_memory_write_throughput -4.584e-01 1.085e-01 -4.223 2.79e-05
## issued_ipc 3.639e-02 9.631e-02 0.378 0.705717
## shared_memory_load_throughput -4.134e-03 8.654e-02 -0.048 0.961914
## system_memory_write_throughput -2.561e-04 3.223e-04 -0.795 0.427207
## issued_control.flow_instructions 4.873e-01 2.668e-01 1.827 0.068241
## misc_instructions -1.063e-01 6.416e-02 -1.656 0.098237
## max_clock_rate -4.026e-01 1.152e-01 -3.496 0.000509
## theoretical_flops -2.541e-02 8.840e-02 -0.287 0.773876
##
## (Intercept) *

```

```

## elapsed_cycles_sm          **
## inst_executed              **
## l2_throughput_.reads.
## device_memory_read_throughput
## device_memory_write_throughput  ***
## issued_ipc
## shared_memory_load_throughput
## system_memory_write_throughput
## issued_control.flow_instructions .
## misc_instructions          .
## max_clock_rate            ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04374 on 587 degrees of freedom
## Multiple R-squared:  0.9981, Adjusted R-squared:  0.998
## F-statistic: 2.507e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= kernel  GPU= Tesla-K20  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.068412 -0.023191 -0.006619  0.007276  0.254506
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -3.999e+01  1.125e+01  -3.555 0.000408
## elapsed_cycles_sm    2.145e-02  9.281e-02   0.231 0.817269
## inst_executed      1.111e+00  2.807e-01   3.958 8.48e-05
## l2_throughput_.reads. -3.566e-01  1.169e-01  -3.052 0.002377
## device_memory_read_throughput  3.889e-01  1.748e-01   2.225 0.026473
## device_memory_write_throughput -5.097e-01  1.064e-01  -4.792 2.09e-06
## issued_ipc        1.203e-02  9.685e-02   0.124 0.901157
## shared_memory_load_throughput -2.202e-01  1.154e-01  -1.908 0.056943
## system_memory_write_throughput -6.222e-04  4.051e-04  -1.536 0.125087
## issued_control.flow_instructions  9.499e-01  3.104e-01   3.060 0.002315
## misc_instructions    5.727e-02  8.152e-02   0.702 0.482690
## max_clock_rate     -1.888e-01  1.778e-01  -1.062 0.288754
## theoretical_flops   -2.622e-01  1.061e-01  -2.471 0.013775
##
## (Intercept)          ***
## elapsed_cycles_sm
## inst_executed          ***
## l2_throughput_.reads.  **
## device_memory_read_throughput  *
## device_memory_write_throughput  ***
## issued_ipc
## shared_memory_load_throughput  .
## system_memory_write_throughput
## issued_control.flow_instructions **

```

```

## misc_instructions
## max_clock_rate
## theoretical_flops          *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04277 on 587 degrees of freedom
## Multiple R-squared:  0.9975, Adjusted R-squared:  0.9974
## F-statistic: 1.932e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= kernel  GPU= Quadro  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.110028 -0.017611 -0.002933  0.007873  0.128368
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -2.262e+01  4.982e+00  -4.541 6.81e-06
## elapsed_cycles_sm    -7.051e-01  9.339e-02  -7.550 1.67e-13
## inst_executed        1.254e+00  1.927e-01   6.509 1.62e-10
## l2_throughput_.reads. -4.240e-02  4.492e-02  -0.944  0.3456
## device_memory_read_throughput  9.247e-02  1.019e-01   0.908  0.3645
## device_memory_write_throughput -5.262e-01  3.468e-02 -15.172 < 2e-16
## issued_ipc          -1.007e-01  8.374e-02  -1.202  0.2297
## shared_memory_load_throughput -3.272e-02  5.032e-02  -0.650  0.5158
## system_memory_write_throughput  2.952e-05  2.369e-04   0.125  0.9009
## issued_control.flow_instructions  6.314e-01  1.012e-01   6.240 8.37e-10
## misc_instructions     -1.783e-01  2.162e-02  -8.246 1.08e-15
## max_clock_rate        -2.036e-01  8.294e-02  -2.455  0.0144
## theoretical_flops     -8.260e-02  5.934e-02  -1.392  0.1645
##
## (Intercept)          ***
## elapsed_cycles_sm     ***
## inst_executed         ***
## l2_throughput_.reads.
## device_memory_read_throughput
## device_memory_write_throughput  ***
## issued_ipc
## shared_memory_load_throughput
## system_memory_write_throughput
## issued_control.flow_instructions ***
## misc_instructions     ***
## max_clock_rate        *
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03179 on 587 degrees of freedom
## Multiple R-squared:  0.9989, Adjusted R-squared:  0.9989
## F-statistic: 4.39e+04 on 12 and 587 DF,  p-value: < 2.2e-16

```

```
##
## [1] "kernel= kernel GPU= GTX-750 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.063521 -0.020980 -0.004738  0.005574  0.255203
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.754e+01  1.057e+01  -1.660  0.09748
## elapsed_cycles_sm    -2.848e-01  6.911e-02  -4.122 4.31e-05
## inst_executed      4.896e-01  2.962e-01   1.653  0.09888
## l2_throughput_.reads.  9.866e-02  6.332e-02   1.558  0.11976
## device_memory_read_throughput -1.841e-01  1.339e-01  -1.375  0.16968
## device_memory_write_throughput -5.080e-01  5.293e-02  -9.599 < 2e-16
## issued_ipc        3.523e-01  1.088e-01   3.237  0.00128
## shared_memory_load_throughput  1.914e-02  1.085e-01   0.176  0.86004
## system_memory_write_throughput -3.278e-04  2.588e-04  -1.267  0.20571
## issued_control.flow.instructions  5.470e-01  2.514e-01   2.176  0.02996
## misc_instructions    -6.636e-02  7.484e-02  -0.887  0.37561
## max_clock_rate      -4.320e-01  7.666e-02  -5.636 2.71e-08
## theoretical_flops    -2.395e-01  1.845e-01  -1.299  0.19462
##
## (Intercept)      .
## elapsed_cycles_sm ***
## inst_executed      .
## l2_throughput_.reads.
## device_memory_read_throughput
## device_memory_write_throughput ***
## issued_ipc        **
## shared_memory_load_throughput
## system_memory_write_throughput
## issued_control.flow.instructions *
## misc_instructions
## max_clock_rate      ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03967 on 587 degrees of freedom
## Multiple R-squared:  0.9981, Adjusted R-squared:  0.998
## F-statistic: 2.539e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= GTX-980 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.064130 -0.021911 -0.002563  0.004358  0.251298
```

```
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -4.1223611   6.4292350  -0.641  0.52165
## elapsed_cycles_sm      0.3708840   0.1371059   2.705  0.00703
## inst_executed      0.0204301   0.2521476   0.081  0.93545
## l2_throughput_.reads. -0.0198004   0.0570597  -0.347  0.72871
## device_memory_read_throughput -0.2899981   0.1168784  -2.481  0.01337
## device_memory_write_throughput -0.1730114   0.0897456  -1.928  0.05436
## issued_ipc      -0.1317083   0.0980175  -1.344  0.17956
## shared_memory_load_throughput  0.1877901   0.0685053   2.741  0.00631
## system_memory_write_throughput -0.0002321   0.0002650  -0.876  0.38150
## issued_control.flow_instructions -0.3136876   0.1586781  -1.977  0.04852
## misc_instructions    -0.1859241   0.0280542  -6.627 7.75e-11
## max_clock_rate      -0.2154055   0.0851783  -2.529  0.01170
## theoretical_flops    -0.2905478   0.0933115  -3.114  0.00194
##
## (Intercept)
## elapsed_cycles_sm      **
## inst_executed
## l2_throughput_.reads.
## device_memory_read_throughput  *
## device_memory_write_throughput  .
## issued_ipc
## shared_memory_load_throughput  **
## system_memory_write_throughput
## issued_control.flow_instructions *
## misc_instructions      ***
## max_clock_rate         *
## theoretical_flops      **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04078 on 587 degrees of freedom
## Multiple R-squared:  0.998, Adjusted R-squared:  0.9979
## F-statistic: 2.413e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.063434 -0.018474 -0.002897  0.002559  0.252844
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -9.8931615   6.3808489  -1.550  0.12157
## elapsed_cycles_sm      0.1881751   0.1225075   1.536  0.12507
## inst_executed      0.2596956   0.2863146   0.907  0.36476
## l2_throughput_.reads.  0.0290906   0.0572008   0.509  0.61124
## device_memory_read_throughput -0.2300845   0.1161061  -1.982  0.04798
## device_memory_write_throughput -0.2780569   0.1051276  -2.645  0.00839
```

```

## issued_ipc -0.0282154 0.0938600 -0.301 0.76382
## shared_memory_load_throughput 0.1120291 0.0671408 1.669 0.09574
## system_memory_write_throughput -0.0002687 0.0002438 -1.102 0.27099
## issued_control.flow_instructions 0.0123090 0.1175190 0.105 0.91662
## misc_instructions -0.2084810 0.0269875 -7.725 4.86e-14
## max_clock_rate -0.3382079 0.0784698 -4.310 1.91e-05
## theoretical_flops -0.3326510 0.1099570 -3.025 0.00259
##
## (Intercept)
## elapsed_cycles_sm
## inst_executed
## l2_throughput_reads.
## device_memory_read_throughput *
## device_memory_write_throughput **
## issued_ipc
## shared_memory_load_throughput .
## system_memory_write_throughput
## issued_control.flow_instructions
## misc_instructions ***
## max_clock_rate ***
## theoretical_flops **
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03744 on 587 degrees of freedom
## Multiple R-squared: 0.9981, Adjusted R-squared: 0.9981
## F-statistic: 2.583e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
## Min 1Q Median 3Q Max
## -0.32518 -0.03343 -0.02228 0.03991 0.27495
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) -1.409e+01 3.325e-01 -42.374 < 2e-16 ***
## elapsed_cycles_sm 8.644e-01 9.887e-03 87.422 < 2e-16 ***
## misc_instructions 2.460e-01 1.089e-02 22.596 < 2e-16 ***
## l2_throughput_reads. -3.526e-01 5.421e-02 -6.505 1.66e-10 ***
## device_memory_write_throughput 5.238e-02 3.167e-02 1.654 0.0986 .
## system_memory_write_throughput 3.482e-04 3.680e-04 0.946 0.3444
## max_clock_rate -1.400e+00 5.965e-02 -23.477 < 2e-16 ***
## theoretical_flops -6.315e-01 1.066e-02 -59.233 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05657 on 592 degrees of freedom
## Multiple R-squared: 0.9963, Adjusted R-squared: 0.9962
## F-statistic: 2.271e+04 on 7 and 592 DF, p-value: < 2.2e-16
##

```

```
## [1] "kernel= kernel GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.48875 -0.11568  0.01344  0.09654  0.26316
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.591e+01  4.045e-01 -64.052  <2e-16 ***
## elapsed_cycles_sm    1.154e+00  1.340e-02  86.123  <2e-16 ***
## misc_instructions    3.047e-01  2.237e-02  13.618  <2e-16 ***
## l2_throughput_reads. -1.546e+00  9.978e-02 -15.492  <2e-16 ***
## device_memory_write_throughput  6.758e-01  5.513e-02  12.259  <2e-16 ***
## system_memory_write_throughput  5.499e-04  8.117e-04   0.677    0.498
## max_clock_rate    7.115e-01  7.645e-02   9.307  <2e-16 ***
## theoretical_flops   -5.137e-01  2.405e-02 -21.359  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1108 on 592 degrees of freedom
## Multiple R-squared:  0.9874, Adjusted R-squared:  0.9872
## F-statistic: 6625 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.73125 -0.07966  0.01369  0.04593  0.81026
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -3.109e+01  5.561e-01 -55.913  <2e-16 ***
## elapsed_cycles_sm    1.409e+00  2.232e-02  63.120  <2e-16 ***
## misc_instructions    6.616e-01  3.362e-02  19.678  <2e-16 ***
## l2_throughput_reads. -3.152e+00  1.503e-01 -20.973  <2e-16 ***
## device_memory_write_throughput  1.742e+00  9.181e-02  18.969  <2e-16 ***
## system_memory_write_throughput -1.097e-03  9.163e-04  -1.197    0.232
## max_clock_rate    1.719e+00  1.030e-01  16.688  <2e-16 ***
## theoretical_flops   -5.079e-01  1.935e-02 -26.248  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09681 on 592 degrees of freedom
## Multiple R-squared:  0.9869, Adjusted R-squared:  0.9868
## F-statistic: 6396 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
```



```

## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.39363 -0.03107  0.00241  0.02279  0.23027
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.731e+01  2.314e-01 -74.775 < 2e-16 ***
## elapsed_cycles_sm    9.227e-01  7.508e-03 122.892 < 2e-16 ***
## misc_instructions    7.432e-02  9.961e-03   7.461 3.08e-13 ***
## l2_throughput_reads. -5.083e-01  4.464e-02 -11.386 < 2e-16 ***
## device_memory_write_throughput -5.843e-01  3.454e-02 -16.917 < 2e-16 ***
## system_memory_write_throughput  7.610e-04  3.604e-04   2.112  0.0351 *
## max_clock_rate    -8.781e-01  4.288e-02 -20.477 < 2e-16 ***
## theoretical_flops    -6.015e-02  1.407e-02  -4.276 2.22e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04876 on 592 degrees of freedom
## Multiple R-squared:  0.9974, Adjusted R-squared:  0.9973
## F-statistic: 3.193e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.67012 -0.08893 -0.00320  0.07680  0.28965
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.700e+01  3.589e-01 -75.221 <2e-16 ***
## elapsed_cycles_sm    1.302e+00  1.595e-02  81.625 <2e-16 ***
## misc_instructions    1.980e-01  2.189e-02   9.045 <2e-16 ***
## l2_throughput_reads. -1.708e+00  9.033e-02 -18.903 <2e-16 ***
## device_memory_write_throughput  8.791e-01  5.225e-02  16.825 <2e-16 ***
## system_memory_write_throughput  4.109e-04  6.282e-04   0.654  0.513
## max_clock_rate    1.059e+00  7.243e-02  14.625 <2e-16 ***
## theoretical_flops    3.746e-02  5.085e-02   0.737  0.462
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09672 on 592 degrees of freedom
## Multiple R-squared:  0.9885, Adjusted R-squared:  0.9883
## F-statistic: 7250 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)

```

```
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.08021 -0.02979 -0.01181  0.01419  0.24203
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.617e+01  1.595e-01 -164.095 < 2e-16 ***
## elapsed_cycles_sm  1.112e+00  5.533e-03  201.039 < 2e-16 ***
## misc_instructions  3.090e-02  9.692e-03   3.188 0.00151 **
## l2_throughput_.reads. -3.475e-01  4.335e-02  -8.015 5.88e-15 ***
## device_memory_write_throughput 3.311e-01  2.346e-02  14.115 < 2e-16 ***
## system_memory_write_throughput -3.260e-04  2.956e-04  -1.103 0.27064
## max_clock_rate    4.861e-01  3.005e-02  16.180 < 2e-16 ***
## theoretical_flops  -7.936e-01  9.410e-03 -84.336 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04567 on 592 degrees of freedom
## Multiple R-squared:  0.9974, Adjusted R-squared:  0.9974
## F-statistic: 3.297e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= kernel GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.076605 -0.017530 -0.006790  0.008757  0.246024
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.481e+01  1.406e-01 -176.473 < 2e-16 ***
## elapsed_cycles_sm  1.210e+00  5.002e-03  241.936 < 2e-16 ***
## misc_instructions  -1.560e-01  9.999e-03  -15.599 < 2e-16 ***
## l2_throughput_.reads. -4.347e-02  3.963e-02  -1.097  0.273
## device_memory_write_throughput 2.876e-01  2.054e-02  13.998 < 2e-16 ***
## system_memory_write_throughput -3.380e-04  2.606e-04  -1.297  0.195
## max_clock_rate    2.199e-01  2.666e-02   8.247 1.06e-15 ***
## theoretical_flops  -1.253e+00  1.291e-02 -97.047 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04028 on 592 degrees of freedom
## Multiple R-squared:  0.9978, Adjusted R-squared:  0.9978
## F-statistic: 3.825e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
```

```

##           Min           1Q       Median           3Q           Max
## -0.203082 -0.035698 -0.004596  0.044120  0.218691
##
## Coefficients:
##
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -1.570e+01  8.843e-01 -17.753 < 2e-16 ***
## misc_instructions -2.034e+00  3.929e-01  -5.176 3.11e-07 ***
## active_warps      6.658e-02  6.126e-02   1.087 0.277525
## inst_issued1      2.950e+00  3.815e-01   7.732 4.63e-14 ***
## multiprocessor_activity -2.722e-01  1.386e-01  -1.964 0.050026 .
## achieved_occupancy  3.685e-02  1.018e-01   0.362 0.717470
## device_memory_read_throughput -3.773e-03  7.233e-04  -5.217 2.53e-07 ***
## shared_memory_efficiency  1.712e+00  6.935e-02  24.692 < 2e-16 ***
## l2_read_transactions -2.103e-03  6.048e-02  -0.035 0.972269
## flop_efficiency.peak_single. -4.053e-01  8.032e-02  -5.047 6.00e-07 ***
## flop_efficiency.peak_double. -1.712e-01  5.148e-02  -3.326 0.000936 ***
## max_clock_rate     -1.374e+00  1.815e-01  -7.570 1.46e-13 ***
## theoretical_flops   -8.577e-01  1.390e-02 -61.687 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0676 on 587 degrees of freedom
## Multiple R-squared:  0.9989, Adjusted R-squared:  0.9989
## F-statistic: 4.536e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##           Min           1Q       Median           3Q           Max
## -0.217249 -0.027877  0.003524  0.034431  0.255226
##
## Coefficients:
##
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -2.312e+01  6.971e-01 -33.162 < 2e-16 ***
## misc_instructions -8.419e+00  3.431e-01 -24.540 < 2e-16 ***
## active_warps      1.242e-01  6.409e-02   1.938 0.05309 .
## inst_issued1      9.332e+00  3.212e-01  29.051 < 2e-16 ***
## multiprocessor_activity -4.261e-01  1.253e-01  -3.400 0.00072 ***
## achieved_occupancy  2.026e-01  9.442e-02   2.146 0.03226 *
## device_memory_read_throughput -1.367e-03  6.941e-04  -1.970 0.04932 *
## shared_memory_efficiency  1.179e+00  6.089e-02  19.364 < 2e-16 ***
## l2_read_transactions -3.513e-02  6.871e-02  -0.511 0.60936
## flop_efficiency.peak_single.  3.858e-01  7.297e-02   5.287 1.76e-07 ***
## flop_efficiency.peak_double. -1.060e+00  4.539e-02 -23.343 < 2e-16 ***
## max_clock_rate     1.941e+00  9.345e-02  20.775 < 2e-16 ***
## theoretical_flops   -1.067e+00  1.219e-02 -87.526 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07343 on 587 degrees of freedom
## Multiple R-squared:  0.9987, Adjusted R-squared:  0.9987

```

```
## F-statistic: 3.867e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.238832 -0.034832  0.008333  0.044362  0.181383
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.315e+01  9.969e-01 -23.223 < 2e-16 ***
## misc_instructions    -7.796e+00  3.957e-01 -19.701 < 2e-16 ***
## active_warps        4.345e-01  1.455e-01  2.985  0.00295 **
## inst_issued1       8.473e+00  3.252e-01  26.057 < 2e-16 ***
## multiprocessor_activity -4.217e-01  1.686e-01 -2.502  0.01263 *
## achieved_occupancy   -3.027e-01  1.753e-01 -1.727  0.08468 .
## device_memory_read_throughput -4.324e-04  9.142e-04 -0.473  0.63640
## shared_memory_efficiency 8.332e-01  1.252e-01  6.653 6.60e-11 ***
## l2_read_transactions  -1.308e-01  9.981e-02 -1.310  0.19055
## flop_efficiency.peak_single. 6.357e-01  1.505e-01  4.224 2.79e-05 ***
## flop_efficiency.peak_double. -8.732e-01  4.323e-02 -20.199 < 2e-16 ***
## max_clock_rate       1.710e+00  9.669e-02  17.684 < 2e-16 ***
## theoretical_flops    -1.030e+00  1.230e-02 -83.741 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07743 on 587 degrees of freedom
## Multiple R-squared:  0.9986, Adjusted R-squared:  0.9986
## F-statistic: 3.516e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.101237 -0.029843 -0.001922  0.029390  0.280916
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.302e+01  5.792e-01 -22.486 < 2e-16 ***
## misc_instructions    -3.881e+00  2.482e-01 -15.638 < 2e-16 ***
## active_warps        1.048e-02  3.649e-02  0.287  0.77400
## inst_issued1       4.868e+00  2.451e-01  19.858 < 2e-16 ***
## multiprocessor_activity -6.547e-01  7.088e-02 -9.236 < 2e-16 ***
## achieved_occupancy   2.781e-01  5.354e-02  5.194 2.85e-07 ***
## device_memory_read_throughput -3.164e-04  4.254e-04 -0.744  0.45725
## shared_memory_efficiency 9.364e-01  3.652e-02  25.639 < 2e-16 ***
## l2_read_transactions  -1.059e-02  3.842e-02 -0.276  0.78293
## flop_efficiency.peak_single. -4.095e-01  5.532e-02 -7.402 4.66e-13 ***
```

```

## flop_efficiency.peak_double. -1.546e-01 4.159e-02 -3.718 0.00022 ***
## max_clock_rate -5.383e-01 1.171e-01 -4.598 5.22e-06 ***
## theoretical_flops -9.133e-01 8.694e-03 -105.059 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04281 on 587 degrees of freedom
## Multiple R-squared:  0.9996, Adjusted R-squared:  0.9996
## F-statistic: 1.155e+05 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-750 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.23162 -0.05018  0.01188  0.05242  0.37254
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.522e+01  7.826e-01 -32.233 < 2e-16 ***
## misc_instructions -3.086e+00  5.960e-01  -5.179 3.07e-07 ***
## active_warps      2.052e-01  6.605e-02   3.106 0.001987 **
## inst_issued1      4.306e+00  5.706e-01   7.547 1.70e-13 ***
## multiprocessor_activity -7.827e-02  1.401e-01  -0.559 0.576631
## achieved_occupancy -5.851e-02  9.582e-02  -0.611 0.541717
## device_memory_read_throughput 3.013e-04  8.066e-04   0.374 0.708883
## shared_memory_efficiency 4.185e-01  1.134e-01   3.691 0.000244 ***
## l2_read_transactions -4.544e-01  7.344e-02  -6.187 1.15e-09 ***
## flop_efficiency.peak_single. -9.325e-02  9.376e-02  -0.995 0.320342
## flop_efficiency.peak_double. -3.638e-01  7.642e-02  -4.760 2.44e-06 ***
## max_clock_rate      7.406e-01  1.287e-01   5.754 1.41e-08 ***
## theoretical_flops    -4.819e-01  8.585e-02  -5.613 3.07e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07841 on 587 degrees of freedom
## Multiple R-squared:  0.9984, Adjusted R-squared:  0.9984
## F-statistic: 3.063e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-980 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.154100 -0.021465 -0.007427  0.016335  0.222123
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.699e+01  4.820e-01 -55.994 < 2e-16 ***
## misc_instructions 3.349e+00  4.234e-01   7.909 1.30e-14 ***

```

```

## active_warps                2.373e-02  4.356e-02   0.545 0.586115
## inst_issued1                -2.285e+00  4.191e-01  -5.452 7.33e-08 ***
## multiprocessor_activity     -3.026e-01  8.310e-02  -3.641 0.000295 ***
## achieved_occupancy         -2.088e-01  6.548e-02  -3.188 0.001507 **
## device_memory_read_throughput -1.796e-03  4.979e-04  -3.607 0.000336 ***
## shared_memory_efficiency     4.558e-01  4.514e-02  10.097 < 2e-16 ***
## l2_read_transactions        -9.549e-02  4.870e-02  -1.961 0.050369 .
## flop_efficiency.peak_single. -8.593e-01  6.893e-02 -12.466 < 2e-16 ***
## flop_efficiency.peak_double.  4.682e-01  5.242e-02   8.932 < 2e-16 ***
## max_clock_rate              -5.758e-01  9.431e-02  -6.105 1.87e-09 ***
## theoretical_flops           -6.302e-01  1.653e-02 -38.129 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05118 on 587 degrees of freedom
## Multiple R-squared:  0.9994, Adjusted R-squared:  0.9994
## F-statistic: 7.813e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.171617 -0.023338 -0.002619  0.029015  0.223274
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -2.417e+01  5.266e-01  -45.900 < 2e-16 ***
## misc_instructions    1.296e+00  3.972e-01   3.262 0.001169 **
## active_warps       3.392e-02  4.927e-02   0.688 0.491460
## inst_issued1     -3.877e-01  3.934e-01  -0.986 0.324754
## multiprocessor_activity -2.845e-01  9.273e-02  -3.068 0.002254 **
## achieved_occupancy  -3.933e-02  7.060e-02  -0.557 0.577690
## device_memory_read_throughput -2.034e-03  5.229e-04  -3.889 0.000112 ***
## shared_memory_efficiency  2.023e-01  5.660e-02   3.575 0.000379 ***
## l2_read_transactions  5.128e-02  5.407e-02   0.948 0.343293
## flop_efficiency.peak_single. -6.771e-01  6.835e-02  -9.907 < 2e-16 ***
## flop_efficiency.peak_double.  2.041e-01  4.947e-02   4.126 4.23e-05 ***
## max_clock_rate     -2.252e-01  9.170e-02  -2.456 0.014342 *
## theoretical_flops   -9.355e-01  9.177e-03 -101.938 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05754 on 587 degrees of freedom
## Multiple R-squared:  0.9992, Adjusted R-squared:  0.9992
## F-statistic: 6.258e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##

```

```

## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.59220 -0.08202  0.02793  0.11233  0.54237
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -1.564e+01  6.788e-01 -23.035  <2e-16 ***
## active_warps    9.488e-01  7.235e-03 131.142  <2e-16 ***
## flop_efficiency.peak_double. -7.159e-03  1.080e-02  -0.663    0.508
## device_memory_read_throughput -1.347e-02  9.847e-04 -13.678  <2e-16 ***
## shared_memory_efficiency    7.411e-01  8.341e-02   8.884  <2e-16 ***
## flop_efficiency.peak_single. -3.553e-01  1.972e-02 -18.015  <2e-16 ***
## max_clock_rate   -1.968e+00  1.444e-01 -13.625  <2e-16 ***
## theoretical_flops  -6.740e-01  1.052e-02 -64.101  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1369 on 592 degrees of freedom
## Multiple R-squared:  0.9955, Adjusted R-squared:  0.9955
## F-statistic: 1.89e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.5082 -0.1356  0.0328  0.1232  0.3805
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -22.324706   0.398465 -56.027  < 2e-16 ***
## active_warps    0.953395   0.009131 104.411  < 2e-16 ***
## flop_efficiency.peak_double. -0.020033   0.015586  -1.285    0.199
## device_memory_read_throughput -0.009736   0.001152  -8.453  < 2e-16 ***
## shared_memory_efficiency  -0.139154   0.029405  -4.732 2.78e-06 ***
## flop_efficiency.peak_single. -0.328950   0.025290 -13.007  < 2e-16 ***
## max_clock_rate  -0.477774   0.064274  -7.433 3.73e-13 ***
## theoretical_flops  -0.690403   0.012409 -55.638  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1593 on 592 degrees of freedom
## Multiple R-squared:  0.994, Adjusted R-squared:  0.9939
## F-statistic: 1.402e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

```
## -0.32602 -0.12153 0.01944 0.11745 0.30539
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -22.395013   0.368081 -60.843 < 2e-16 ***
## active_warps      0.949260   0.008339 113.835 < 2e-16 ***
## flop_efficiency.peak_double. -0.053187   0.012801  -4.155 3.73e-05 ***
## device_memory_read_throughput -0.005205   0.001544  -3.371 0.000797 ***
## shared_memory_efficiency -0.125905   0.027764  -4.535 6.98e-06 ***
## flop_efficiency.peak_single. -0.422929   0.027726 -15.254 < 2e-16 ***
## max_clock_rate  -0.439646   0.059891  -7.341 7.05e-13 ***
## theoretical_flops -0.709334   0.011862 -59.798 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1469 on 592 degrees of freedom
## Multiple R-squared:  0.995, Adjusted R-squared:  0.9949
## F-statistic: 1.669e+04 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.52805 -0.10231  0.03954  0.08963  0.52291
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.299e+01  9.291e-01 -13.977 < 2e-16 ***
## active_warps      9.559e-01  6.953e-03 137.479 < 2e-16 ***
## flop_efficiency.peak_double.  2.622e-01  2.808e-02  9.337 < 2e-16 ***
## device_memory_read_throughput -1.051e-02  9.308e-04 -11.291 < 2e-16 ***
## shared_memory_efficiency -1.527e-01  2.513e-02 -6.074 2.23e-09 ***
## flop_efficiency.peak_single. -6.114e-01  3.482e-02 -17.558 < 2e-16 ***
## max_clock_rate  -1.900e+00  1.432e-01 -13.265 < 2e-16 ***
## theoretical_flops -6.701e-01  1.051e-02 -63.777 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1363 on 592 degrees of freedom
## Multiple R-squared:  0.9957, Adjusted R-squared:  0.9956
## F-statistic: 1.944e+04 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.38951 -0.10929  0.01692  0.11185  0.39240
##
```



```
## Coefficients:
##
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.111e+01  3.272e-01 -64.510 < 2e-16 ***
## active_warps      9.090e-01  7.312e-03 124.321 < 2e-16 ***
## flop_efficiency.peak_double.  3.609e-02  1.080e-02   3.342 0.000885 ***
## device_memory_read_throughput -9.065e-03  9.346e-04  -9.699 < 2e-16 ***
## shared_memory_efficiency    -6.003e-01  5.881e-02 -10.208 < 2e-16 ***
## flop_efficiency.peak_single. -1.892e-01  1.975e-02  -9.581 < 2e-16 ***
## max_clock_rate    -2.714e-01  5.864e-02  -4.628 4.54e-06 ***
## theoretical_flops    -1.682e-01  5.929e-02  -2.837 0.004710 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1314 on 592 degrees of freedom
## Multiple R-squared:  0.9955, Adjusted R-squared:  0.9954
## F-statistic: 1.865e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.47168 -0.11055  0.03209  0.08291  0.40500
##
## Coefficients:
##
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -24.397556   0.346008 -70.512 < 2e-16 ***
## active_warps      0.969366   0.006647 145.836 < 2e-16 ***
## flop_efficiency.peak_double. -0.057241   0.010378  -5.516 5.19e-08 ***
## device_memory_read_throughput -0.008876   0.000865 -10.261 < 2e-16 ***
## shared_memory_efficiency    -0.112159   0.023866  -4.699 3.25e-06 ***
## flop_efficiency.peak_single. -0.320046   0.017515 -18.273 < 2e-16 ***
## max_clock_rate    -0.208659   0.055734  -3.744 0.000199 ***
## theoretical_flops    -0.640215   0.010526 -60.824 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1288 on 592 degrees of freedom
## Multiple R-squared:  0.996, Adjusted R-squared:  0.996
## F-statistic: 2.108e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.49310 -0.10056  0.03551  0.07908  0.49092
##
## Coefficients:
##
##              Estimate Std. Error t value Pr(>|t|)
```

```

## (Intercept)                -2.334e+01  3.431e-01 -68.021 < 2e-16 ***
## active_warps                9.665e-01  7.103e-03 136.068 < 2e-16 ***
## flop_efficiency.peak_double. -5.976e-02  1.124e-02 -5.318 1.49e-07 ***
## device_memory_read_throughput -8.149e-03  9.167e-04 -8.890 < 2e-16 ***
## shared_memory_efficiency     -3.293e-01  3.024e-02 -10.890 < 2e-16 ***
## flop_efficiency.peak_single. -3.144e-01  1.897e-02 -16.575 < 2e-16 ***
## max_clock_rate              -2.541e-01  5.823e-02 -4.364 1.51e-05 ***
## theoretical_flops            -7.885e-01  1.369e-02 -57.583 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1375 on 592 degrees of freedom
## Multiple R-squared:  0.9955, Adjusted R-squared:  0.9955
## F-statistic: 1.873e+04 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-680 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.179403 -0.031004 -0.000573  0.026110  0.227410
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -7.285003   0.929483  -7.838 2.17e-14 ***
## load.store_instructions -0.318922   0.137392  -2.321 0.020615 *
## active_warps    -0.068732   0.055219  -1.245 0.213730
## inst_executed     6.222861   0.204269  30.464 < 2e-16 ***
## inst_issued1     1.247661   0.333059   3.746 0.000197 ***
## misc_instructions  -6.092263   0.317712 -19.175 < 2e-16 ***
## multiprocessor_activity -0.623832   0.112718  -5.534 4.71e-08 ***
## achieved_occupancy  0.201380   0.090008   2.237 0.025637 *
## l2_read_transactions  0.002734   0.058106   0.047 0.962493
## flop_efficiency.peak_single. -0.545616   0.068715  -7.940 1.03e-14 ***
## flop_efficiency.peak_double.  0.055184   0.047379   1.165 0.244600
## max_clock_rate    -0.388238   0.131593  -2.950 0.003301 **
## theoretical_flops   -0.923999   0.010779 -85.722 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06018 on 587 degrees of freedom
## Multiple R-squared:  0.9991, Adjusted R-squared:  0.9991
## F-statistic: 5.726e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.171746 -0.025019 -0.005193  0.025888  0.265384

```

```
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -6.39309    0.77025  -8.300 7.18e-16 ***
## load.store_instructions -0.59965    0.16650  -3.601 0.000343 ***
## active_warps      -0.06326    0.04937  -1.281 0.200627
## inst_executed       6.76435    0.22780  29.695 < 2e-16 ***
## inst_issued1      -0.92253    0.43585  -2.117 0.034712 *
## misc_instructions   -4.12672    0.43785  -9.425 < 2e-16 ***
## multiprocessor_activity -0.31403    0.09087  -3.456 0.000588 ***
## achieved_occupancy   0.03046    0.06236   0.488 0.625412
## l2_read_transactions -0.05913    0.06088  -0.971 0.331814
## flop_efficiency.peak_single. -0.82815    0.08509  -9.733 < 2e-16 ***
## flop_efficiency.peak_double.  0.35353    0.06178   5.722 1.68e-08 ***
## max_clock_rate      -1.32624    0.15114  -8.775 < 2e-16 ***
## theoretical_flops    -0.86647    0.01306 -66.361 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05918 on 587 degrees of freedom
## Multiple R-squared:  0.9992, Adjusted R-squared:  0.9992
## F-statistic: 5.956e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.161243 -0.022842 -0.003823  0.026894  0.138143
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -7.58354    0.86764  -8.740 < 2e-16 ***
## load.store_instructions -0.59670    0.15365  -3.884 0.000115 ***
## active_warps      -0.21764    0.07320  -2.973 0.003065 **
## inst_executed       7.44928    0.30704  24.262 < 2e-16 ***
## inst_issued1      -1.92524    0.48814  -3.944 8.98e-05 ***
## misc_instructions   -3.62716    0.38564  -9.406 < 2e-16 ***
## multiprocessor_activity  0.27777    0.12527   2.217 0.026980 *
## achieved_occupancy   0.13193    0.07891   1.672 0.095063 .
## l2_read_transactions -0.09357    0.08373  -1.118 0.264215
## flop_efficiency.peak_single. -1.17377    0.12273  -9.564 < 2e-16 ***
## flop_efficiency.peak_double.  0.37486    0.06103   6.142 1.50e-09 ***
## max_clock_rate      -1.57627    0.15632 -10.084 < 2e-16 ***
## theoretical_flops    -0.85073    0.01189 -71.525 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05655 on 587 degrees of freedom
## Multiple R-squared:  0.9993, Adjusted R-squared:  0.9992
## F-statistic: 6.594e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
```

```
## [1] "kernel= calculate_temp GPU= Quadro threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.09920 -0.01769 -0.00825  0.01531  0.28649
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -10.107429   0.533890  -18.932 < 2e-16 ***
## load.store_instructions    -0.332993   0.091050   -3.657 0.000278 ***
## active_warps         0.046503   0.032811    1.417 0.156925
## inst_executed        7.476572   0.247250   30.239 < 2e-16 ***
## inst_issued1        2.016755   0.197614   10.206 < 2e-16 ***
## misc_instructions     -8.216798   0.280468  -29.297 < 2e-16 ***
## multiprocessor_activity  -0.390302   0.057969   -6.733 3.97e-11 ***
## achieved_occupancy      0.029773   0.042937    0.693 0.488323
## l2_read_transactions     0.005030   0.039283    0.128 0.898166
## flop_efficiency.peak_single. -0.202067   0.043847   -4.608 4.98e-06 ***
## flop_efficiency.peak_double. -0.252750   0.036281   -6.966 8.75e-12 ***
## max_clock_rate         0.396149   0.108703    3.644 0.000292 ***
## theoretical_flops      -0.972607   0.007917 -122.845 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04008 on 587 degrees of freedom
## Multiple R-squared:  0.9996, Adjusted R-squared:  0.9996
## F-statistic: 1.317e+05 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-750 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.174483 -0.024312 -0.002417  0.017687  0.257951
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -10.18749   1.03724  -9.822 < 2e-16 ***
## load.store_instructions    -0.35060   0.17136   -2.046 0.041207 *
## active_warps         -0.04616   0.05204   -0.887 0.375465
## inst_executed        5.10570   0.27023   18.894 < 2e-16 ***
## inst_issued1        0.43360   0.30281    1.432 0.152697
## misc_instructions     -4.09970   0.50034   -8.194 1.59e-15 ***
## multiprocessor_activity  -0.36377   0.09558   -3.806 0.000156 ***
## achieved_occupancy      0.04799   0.06474    0.741 0.458789
## l2_read_transactions     -0.04642   0.05968   -0.778 0.436972
## flop_efficiency.peak_single. -0.65649   0.07137   -9.199 < 2e-16 ***
## flop_efficiency.peak_double.  0.15725   0.04235    3.713 0.000224 ***
## max_clock_rate      -0.69244   0.09713   -7.129 2.99e-12 ***
```

```

## theoretical_flops          -0.65798    0.04711 -13.967 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05942 on 587 degrees of freedom
## Multiple R-squared:  0.9991, Adjusted R-squared:  0.9991
## F-statistic: 5.338e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-980 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.158813 -0.027370 -0.004571  0.022118  0.246119
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -14.13704     1.59001  -8.891 < 2e-16 ***
## load.store_instructions    -0.07086     0.13433  -0.528 0.598044
## active_warps         0.17796     0.04048   4.397 1.31e-05 ***
## inst_executed        4.10752     0.50062   8.205 1.46e-15 ***
## inst_issued1       -0.29946     0.53062  -0.564 0.572726
## misc_instructions     -2.88580     0.91534  -3.153 0.001700 **
## multiprocessor_activity  -0.35759     0.07793  -4.589 5.45e-06 ***
## achieved_occupancy    -0.44163     0.06041  -7.310 8.79e-13 ***
## l2_read_transactions   -0.04683     0.05809  -0.806 0.420418
## flop_efficiency.peak_single. -0.45944     0.06829  -6.728 4.09e-11 ***
## flop_efficiency.peak_double.  0.23836     0.06690   3.563 0.000397 ***
## max_clock_rate       -0.61785     0.09240  -6.686 5.33e-11 ***
## theoretical_flops     -0.82147     0.03174 -25.882 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05388 on 587 degrees of freedom
## Multiple R-squared:  0.9993, Adjusted R-squared:  0.9993
## F-statistic: 7.05e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-970 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.177759 -0.029264 -0.001833  0.038228  0.237866
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -18.49914     4.81564  -3.841 0.000136 ***
## load.store_instructions    0.21419     0.22250   0.963 0.336125
## active_warps         0.13607     0.04406   3.089 0.002106 **
## inst_executed        1.84782     1.81665   1.017 0.309499

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## inst_issued1          -0.05437    0.63585  -0.086 0.931881
## misc_instructions     -1.13671    2.22235  -0.511 0.609201
## multiprocessor_activity -0.46017    0.08839  -5.206 2.67e-07 ***
## achieved_occupancy    -0.19097    0.06006  -3.180 0.001551 **
## l2_read_transactions  -0.02559    0.06400  -0.400 0.689442
## flop_efficiency.peak_single. -0.51491    0.07702  -6.685 5.37e-11 ***
## flop_efficiency.peak_double.  0.18265    0.07384   2.474 0.013658 *
## max_clock_rate        -0.31420    0.14968  -2.099 0.036233 *
## theoretical_flops      -0.93801    0.01220 -76.885 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05897 on 587 degrees of freedom
## Multiple R-squared:  0.9992, Adjusted R-squared:  0.9992
## F-statistic: 5.958e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-680 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.38070 -0.05559  0.01226  0.06622  0.30698
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -19.600325   0.479741  -40.86 < 2e-16 ***
## misc_instructions    -0.288811   0.063053   -4.58 5.66e-06 ***
## active_warps         1.230548   0.062331   19.74 < 2e-16 ***
## achieved_occupancy   -1.598632   0.101089  -15.81 < 2e-16 ***
## flop_efficiency.peak_single.  0.335249   0.059763    5.61 3.12e-08 ***
## flop_efficiency.peak_double.  0.130188   0.009993   13.03 < 2e-16 ***
## max_clock_rate      -1.209534   0.091424  -13.23 < 2e-16 ***
## theoretical_flops    -0.767674   0.009167  -83.75 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1119 on 592 degrees of freedom
## Multiple R-squared:  0.997, Adjusted R-squared:  0.997
## F-statistic: 2.83e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.27470 -0.07033  0.02130  0.08114  0.33483
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -23.502295   0.305564  -76.915 < 2e-16 ***

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## misc_instructions          0.317213    0.026090   12.158 < 2e-16 ***
## active_warps              0.625198    0.025186   24.824 < 2e-16 ***
## achieved_occupancy        -0.678830    0.050228  -13.515 < 2e-16 ***
## flop_efficiency.peak_single. -0.207013    0.031902   -6.489 1.83e-10 ***
## flop_efficiency.peak_double.  0.158695    0.011994   13.231 < 2e-16 ***
## max_clock_rate            -0.388485    0.047055   -8.256 9.85e-16 ***
## theoretical_flops          -0.763968    0.009888  -77.261 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1208 on 592 degrees of freedom
## Multiple R-squared:  0.9966, Adjusted R-squared:  0.9965
## F-statistic: 2.444e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.26578 -0.05740  0.01909  0.07025  0.26439
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -23.436174   0.296513  -79.039 < 2e-16 ***
## misc_instructions     0.269083   0.026263   10.246 < 2e-16 ***
## active_warps        0.682464   0.025581   26.678 < 2e-16 ***
## achieved_occupancy  -0.617481   0.051694  -11.945 < 2e-16 ***
## flop_efficiency.peak_single. -0.261565   0.033899   -7.716 5.12e-14 ***
## flop_efficiency.peak_double.  0.096018   0.012682    7.571 1.43e-13 ***
## max_clock_rate     -0.403239   0.045744   -8.815 < 2e-16 ***
## theoretical_flops    -0.768276   0.009442  -81.369 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1162 on 592 degrees of freedom
## Multiple R-squared:  0.9968, Adjusted R-squared:  0.9968
## F-statistic: 2.67e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= Quadro threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.231013 -0.031439  0.004909  0.036488  0.246282
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -10.016203   0.507586  -19.73 <2e-16 ***
## misc_instructions  0.373508   0.015863   23.55 <2e-16 ***
## active_warps     0.579887   0.015306   37.89 <2e-16 ***

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## achieved_occupancy          -0.813400    0.031654  -25.70    <2e-16 ***
## flop_efficiency.peak_single. -0.667703    0.023421  -28.51    <2e-16 ***
## flop_efficiency.peak_double.  0.585469    0.016958   34.52    <2e-16 ***
## max_clock_rate              -2.471435    0.078351  -31.54    <2e-16 ***
## theoretical_flops            -0.759606    0.005973 -127.18    <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07324 on 592 degrees of freedom
## Multiple R-squared:  0.9988, Adjusted R-squared:  0.9987
## F-statistic: 6.759e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-750 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.23319 -0.04879  0.01395  0.05937  0.34298
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -23.113596   0.226034 -102.257 < 2e-16 ***
## misc_instructions      1.097627   0.038266  28.684 < 2e-16 ***
## active_warps       -0.132725   0.036552  -3.631 0.000307 ***
## achieved_occupancy    0.254861   0.052650   4.841 1.65e-06 ***
## flop_efficiency.peak_single. -0.883569   0.035679 -24.765 < 2e-16 ***
## flop_efficiency.peak_double.  0.206332   0.008107  25.451 < 2e-16 ***
## max_clock_rate     -0.167908   0.034308  -4.894 1.27e-06 ***
## theoretical_flops    -0.012570   0.032288  -0.389 0.697197
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08661 on 592 degrees of freedom
## Multiple R-squared:  0.998, Adjusted R-squared:  0.998
## F-statistic: 4.303e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-980 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.16963 -0.03130  0.00388  0.02405  0.31640
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -27.392562   0.177820 -154.047 < 2e-16 ***
## misc_instructions    0.312851   0.013398  23.350 < 2e-16 ***
## active_warps       0.653025   0.012986  50.287 < 2e-16 ***
## achieved_occupancy  -1.115638   0.031540 -35.372 < 2e-16 ***
## flop_efficiency.peak_single. -0.042442   0.016731  -2.537 0.011447 *

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## flop_efficiency.peak_double.    0.137668    0.005978    23.029 < 2e-16 ***
## max_clock_rate                  0.093039    0.026105     3.564 0.000395 ***
## theoretical_flops               -0.718629    0.005278   -136.157 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06169 on 592 degrees of freedom
## Multiple R-squared:  0.9991, Adjusted R-squared:  0.9991
## F-statistic: 9.217e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= calculate_temp GPU= GTX-970 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.175698 -0.024247  0.003615  0.033343  0.274269
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -25.677739   0.158554  -161.950 <2e-16 ***
## misc_instructions     0.701277   0.016025   43.763 <2e-16 ***
## active_warps        0.275771   0.015321   17.999 <2e-16 ***
## achieved_occupancy  -0.464025   0.026598  -17.446 <2e-16 ***
## flop_efficiency.peak_single. -0.433774   0.016062  -27.006 <2e-16 ***
## flop_efficiency.peak_double.  0.130760   0.005606   23.325 <2e-16 ***
## max_clock_rate    -0.051618   0.024488   -2.108  0.0355 *
## theoretical_flops  -0.949884   0.006690  -141.986 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06073 on 592 degrees of freedom
## Multiple R-squared:  0.9991, Adjusted R-squared:  0.9991
## F-statistic: 9.631e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.22536 -0.01004  0.00560  0.01985  0.11413
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)    -23.497401   3.389886  -6.932
## integer_instructions     0.191688   0.242746   0.790
## registers.per.thread    -3.813126   0.626129  -6.090
## active_warps         0.619863   0.261989   2.366
## multiprocessor_activity -0.018256   0.043091  -0.424
## issue_slot_utilization  0.419612   0.230485   1.821
## device_memory_read_throughput -0.070319   0.026706  -2.633

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## global_load_transactions_per_request      0.141288    0.069290    2.039
## l2_write_transactions                     -0.032699    0.043783   -0.747
## executed_load.store_instructions          0.165978    0.029380    5.649
## control.flow_function_unit_utilization    0.004044    0.022529    0.180
## max_clock_rate                           1.336822    0.102372   13.058
## theoretical_flops                         -1.146878    0.044163  -25.969
##                                           Pr(>|t|)
## (Intercept)                             1.10e-11 ***
## integer_instructions                     0.43004
## registers.per.thread                     2.04e-09 ***
## active_warps                             0.01831 *
## multiprocessor_activity                  0.67196
## issue_slot_utilization                   0.06918 .
## device_memory_read_throughput            0.00868 **
## global_load_transactions_per_request      0.04189 *
## l2_write_transactions                     0.45546
## executed_load.store_instructions          2.51e-08 ***
## control.flow_function_unit_utilization    0.85759
## max_clock_rate                           < 2e-16 ***
## theoretical_flops                         < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03936 on 587 degrees of freedom
## Multiple R-squared:  0.9982, Adjusted R-squared:  0.9982
## F-statistic: 2.774e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1  GPU= Tesla-K40  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.223927 -0.018468  0.005048  0.022253  0.112965
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)    -21.754899   2.032738 -10.702
## integer_instructions      0.334768   0.112890   2.965
## registers.per.thread    -3.802664   0.583231  -6.520
## active_warps           0.546838   0.167300   3.269
## multiprocessor_activity -0.027631   0.043924  -0.629
## issue_slot_utilization  0.063196   0.217561   0.290
## device_memory_read_throughput -0.068957   0.026592  -2.593
## global_load_transactions_per_request  0.063457   0.119519   0.531
## l2_write_transactions  -0.048186   0.041963  -1.148
## executed_load.store_instructions  0.095483   0.050558   1.889
## control.flow_function_unit_utilization -0.001244   0.015619  -0.080
## max_clock_rate         1.289357   0.142441   9.052
## theoretical_flops      -1.072177   0.088188 -12.158
##                                           Pr(>|t|)
## (Intercept)      < 2e-16 ***
## integer_instructions  0.00315 **

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## registers.per.thread          1.52e-10 ***
## active_warps                 0.00114 **
## multiprocessor_activity      0.52955
## issue_slot_utilization       0.77155
## device_memory_read_throughput 0.00975 **
## global_load_transactions_per_request 0.59567
## l2_write_transactions        0.25131
## executed_load.store_instructions 0.05944 .
## control.flow_function_unit_utilization 0.93653
## max_clock_rate               < 2e-16 ***
## theoretical_flops            < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04051 on 587 degrees of freedom
## Multiple R-squared:  0.9979, Adjusted R-squared:  0.9978
## F-statistic: 2.315e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.219398 -0.016567  0.006469  0.022544  0.114874
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)    -25.132522   3.279364  -7.664
## integer_instructions    0.497788   0.347705   1.432
## registers.per.thread   -3.734645   0.531763  -7.023
## active_warps         0.620638   0.216708   2.864
## multiprocessor_activity -0.008936   0.044464  -0.201
## issue_slot_utilization  0.562635   0.336766   1.671
## device_memory_read_throughput -0.057598   0.027324  -2.108
## global_load_transactions_per_request  0.182122   0.175884   1.035
## l2_write_transactions  -0.340781   0.324473  -1.050
## executed_load.store_instructions  0.167092   0.058598   2.852
## control.flow_function_unit_utilization -0.007248   0.019642  -0.369
## max_clock_rate        1.175126   0.464422   2.530
## theoretical_flops     -1.188460   0.079422 -14.964
##
##              Pr(>|t|)
## (Intercept)    7.51e-14 ***
## integer_instructions    0.15278
## registers.per.thread    6.03e-12 ***
## active_warps         0.00433 **
## multiprocessor_activity  0.84079
## issue_slot_utilization  0.09531 .
## device_memory_read_throughput  0.03546 *
## global_load_transactions_per_request  0.30088
## l2_write_transactions    0.29403
## executed_load.store_instructions  0.00450 **
## control.flow_function_unit_utilization  0.71226

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## max_clock_rate                0.01166 *
## theoretical_flops             < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04035 on 587 degrees of freedom
## Multiple R-squared:  0.998, Adjusted R-squared:  0.998
## F-statistic: 2.469e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.102426 -0.012278  0.004087  0.016547  0.109947
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -24.05817    3.93424  -6.115
## integer_instructions             0.11763    0.22839   0.515
## registers.per.thread           -3.37970    0.48853  -6.918
## active_warps                   0.72347    0.21144   3.422
## multiprocessor_activity        -0.71027    0.33240  -2.137
## issue_slot_utilization         0.58958    0.36422   1.619
## device_memory_read_throughput  -0.16357    0.04230  -3.867
## global_load_transactions_per_request 0.04747    0.05758   0.824
## l2_write_transactions          -0.04408    0.03724  -1.184
## executed_load.store_instructions  0.18416    0.04480   4.111
## control.flow_function_unit_utilization -0.02975    0.01821  -1.634
## max_clock_rate                 1.43597    0.39911   3.598
## theoretical_flops              -1.06626    0.11031  -9.666
##                                Pr(>|t|)
## (Intercept)                   1.76e-09 ***
## integer_instructions           0.606725
## registers.per.thread           1.20e-11 ***
## active_warps                   0.000666 ***
## multiprocessor_activity        0.033031 *
## issue_slot_utilization         0.106042
## device_memory_read_throughput  0.000123 ***
## global_load_transactions_per_request 0.410026
## l2_write_transactions          0.237031
## executed_load.store_instructions 4.51e-05 ***
## control.flow_function_unit_utilization 0.102838
## max_clock_rate                 0.000348 ***
## theoretical_flops              < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03552 on 587 degrees of freedom
## Multiple R-squared:  0.9985, Adjusted R-squared:  0.9985
## F-statistic: 3.258e+04 on 12 and 587 DF, p-value: < 2.2e-16
##

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```

## [1] "kernel= hotspotOpt1 GPU= GTX-750 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.225057 -0.009830  0.006397  0.017176  0.076892
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)    -19.80155     2.02840  -9.762
## integer_instructions      0.48558     0.09095   5.339
## registers.per.thread    -4.73234     0.37563 -12.599
## active_warps           0.30419     0.14804   2.055
## multiprocessor_activity -0.01555     0.03934  -0.395
## issue_slot_utilization  0.23033     0.25108   0.917
## device_memory_read_throughput -0.04487     0.02427  -1.849
## global_load_transactions_per_request 0.22969     0.08554   2.685
## l2_write_transactions  -0.06153     0.03738  -1.646
## executed_load.store_instructions  0.18445     0.05758   3.203
## control.flow_function_unit_utilization 0.01308     0.01289   1.015
## max_clock_rate         1.48355     0.13213  11.228
## theoretical_flops      -1.18266     0.05353 -22.094
##
##              Pr(>|t|)
## (Intercept)    < 2e-16 ***
## integer_instructions 1.34e-07 ***
## registers.per.thread    < 2e-16 ***
## active_warps      0.04034 *
## multiprocessor_activity 0.69282
## issue_slot_utilization 0.35933
## device_memory_read_throughput 0.06494 .
## global_load_transactions_per_request 0.00746 **
## l2_write_transactions  0.10030
## executed_load.store_instructions 0.00143 **
## control.flow_function_unit_utilization 0.31056
## max_clock_rate        < 2e-16 ***
## theoretical_flops      < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03597 on 587 degrees of freedom
## Multiple R-squared:  0.9959, Adjusted R-squared:  0.9958
## F-statistic: 1.187e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-980 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.223377 -0.011464  0.003873  0.019112  0.114275
##

```

```

## Coefficients:
##
##               Estimate Std. Error t value
## (Intercept)    -19.08238    5.72888  -3.331
## integer_instructions      0.50012    0.20187   2.477
## registers.per.thread    -4.68714    1.20135  -3.902
## active_warps           0.31525    0.19415   1.624
## multiprocessor_activity  -0.01972    0.04034  -0.489
## issue_slot_utilization   0.13008    0.32686   0.398
## device_memory_read_throughput -0.06251    0.02508  -2.493
## global_load_transactions_per_request 0.21010    0.05210   4.032
## l2_write_transactions   -0.04361    0.03737  -1.167
## executed_load.store_instructions 0.14321    0.03880   3.691
## control.flow_function_unit_utilization 0.01170    0.01468   0.797
## max_clock_rate          1.38682    0.09276  14.951
## theoretical_flops       -1.16599    0.04311 -27.047
##
##               Pr(>|t|)
## (Intercept)    0.000920 ***
## integer_instructions 0.013515 *
## registers.per.thread 0.000107 ***
## active_warps      0.104967
## multiprocessor_activity 0.625078
## issue_slot_utilization 0.690801
## device_memory_read_throughput 0.012946 *
## global_load_transactions_per_request 6.25e-05 ***
## l2_write_transactions 0.243637
## executed_load.store_instructions 0.000244 ***
## control.flow_function_unit_utilization 0.425680
## max_clock_rate      < 2e-16 ***
## theoretical_flops    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03647 on 587 degrees of freedom
## Multiple R-squared:  0.9985, Adjusted R-squared:  0.9985
## F-statistic: 3.235e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.225281 -0.009603  0.004137  0.016234  0.111058
##
## Coefficients:
##
##               Estimate Std. Error t value
## (Intercept)    -33.048348    4.702377  -7.028
## integer_instructions    -0.082512    0.200139  -0.412
## registers.per.thread    -1.469694    1.118160  -1.314
## active_warps           0.932473    0.207530   4.493
## multiprocessor_activity  -0.006004    0.037778  -0.159
## issue_slot_utilization   0.678041    0.187681   3.613
## device_memory_read_throughput -0.073313    0.025356  -2.891

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## global_load_transactions_per_request    -0.065563    0.095726   -0.685
## l2_write_transactions                   -0.033482    0.038026   -0.880
## executed_load.store_instructions         0.151149    0.020124    7.511
## control.flow_function_unit_utilization  -0.014989    0.013828   -1.084
## max_clock_rate                          1.304558    0.092640   14.082
## theoretical_flops                       -1.134055    0.041180  -27.539
##                                         Pr(>|t|)
## (Intercept)                            5.83e-12 ***
## integer_instructions                    0.680289
## registers.per.thread                    0.189229
## active_warps                           8.45e-06 ***
## multiprocessor_activity                 0.873774
## issue_slot_utilization                  0.000329 ***
## device_memory_read_throughput           0.003978 **
## global_load_transactions_per_request    0.493676
## l2_write_transactions                   0.378955
## executed_load.store_instructions         2.20e-13 ***
## control.flow_function_unit_utilization  0.278837
## max_clock_rate                         < 2e-16 ***
## theoretical_flops                       < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03447 on 587 degrees of freedom
## Multiple R-squared:  0.9987, Adjusted R-squared:  0.9986
## F-statistic: 3.642e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1  GPU= GTX-680  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.177760 -0.034397  0.004416  0.032059  0.105973
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -38.48260     1.02830  -37.424
## integer_instructions            -0.74424     0.09017   -8.254
## issue_slot_utilization          1.56461     0.11642  13.439
## active_warps                   1.73940     0.09102  19.109
## device_memory_read_throughput  -0.17668     0.02780   -6.355
## control.flow_function_unit_utilization -0.14114     0.01296 -10.890
## max_clock_rate                  0.51749     0.07734    6.691
## theoretical_flops              -0.99158     0.04174 -23.757
##                                Pr(>|t|)
## (Intercept)                   < 2e-16 ***
## integer_instructions           1.00e-15 ***
## issue_slot_utilization         < 2e-16 ***
## active_warps                   < 2e-16 ***
## device_memory_read_throughput  4.15e-10 ***
## control.flow_function_unit_utilization < 2e-16 ***
## max_clock_rate                 5.13e-11 ***

```

```

## theoretical_flops < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04408 on 592 degrees of freedom
## Multiple R-squared:  0.9978, Adjusted R-squared:  0.9977
## F-statistic: 3.791e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.171969 -0.026990 -0.002007  0.025193  0.104152
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)      -31.233897   1.070863  -29.167
## integer_instructions      0.183860   0.049178   3.739
## issue_slot_utilization    0.653302   0.111524   5.858
## active_warps          0.809469   0.051086  15.845
## device_memory_read_throughput -0.476624   0.012239 -38.944
## control.flow.function.unit.utilization -0.078098   0.015153  -5.154
## max_clock_rate      0.001127   0.080781   0.014
## theoretical_flops      -0.572315   0.023643 -24.206
##              Pr(>|t|)
## (Intercept)      < 2e-16 ***
## integer_instructions    0.000203 ***
## issue_slot_utilization  7.78e-09 ***
## active_warps          < 2e-16 ***
## device_memory_read_throughput < 2e-16 ***
## control.flow.function.unit.utilization 3.48e-07 ***
## max_clock_rate      0.988875
## theoretical_flops      < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0501 on 592 degrees of freedom
## Multiple R-squared:  0.9967, Adjusted R-squared:  0.9967
## F-statistic: 2.592e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.177923 -0.024299 -0.001494  0.027720  0.102515
##
## Coefficients:
##              Estimate Std. Error t value

```



```

## (Intercept) -29.25120 0.86147 -33.955
## integer_instructions 0.25783 0.04073 6.330
## issue_slot_utilization 0.46886 0.08897 5.270
## active_warps 0.73127 0.04201 17.407
## device_memory_read_throughput -0.46910 0.01150 -40.787
## control.flow_function_unit_utilization -0.06348 0.01384 -4.586
## max_clock_rate -0.15517 0.06760 -2.295
## theoretical_flops -0.54578 0.02124 -25.690
## Pr(>|t|)
## (Intercept) < 2e-16 ***
## integer_instructions 4.83e-10 ***
## issue_slot_utilization 1.91e-07 ***
## active_warps < 2e-16 ***
## device_memory_read_throughput < 2e-16 ***
## control.flow_function_unit_utilization 5.53e-06 ***
## max_clock_rate 0.0221 *
## theoretical_flops < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04892 on 592 degrees of freedom
## Multiple R-squared: 0.9971, Adjusted R-squared: 0.997
## F-statistic: 2.876e+04 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
## Min 1Q Median 3Q Max
## -0.134164 -0.013423 -0.000369 0.013001 0.107235
##
## Coefficients:
## Estimate Std. Error t value
## (Intercept) -20.269886 1.216125 -16.668
## integer_instructions 0.720165 0.058613 12.287
## issue_slot_utilization -0.513813 0.131863 -3.897
## active_warps 0.260154 0.060658 4.289
## device_memory_read_throughput -0.514630 0.009291 -55.393
## control.flow_function_unit_utilization -0.001763 0.012819 -0.138
## max_clock_rate -0.829053 0.088671 -9.350
## theoretical_flops -0.315547 0.026888 -11.736
## Pr(>|t|)
## (Intercept) < 2e-16 ***
## integer_instructions < 2e-16 ***
## issue_slot_utilization 0.000109 ***
## active_warps 2.1e-05 ***
## device_memory_read_throughput < 2e-16 ***
## control.flow_function_unit_utilization 0.890635
## max_clock_rate < 2e-16 ***
## theoretical_flops < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

```
##
## Residual standard error: 0.03767 on 592 degrees of freedom
## Multiple R-squared:  0.9983, Adjusted R-squared:  0.9983
## F-statistic: 4.966e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1  GPU= GTX-750  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.166712 -0.024499  0.001303  0.020214  0.105742
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)      -32.64497    0.98004  -33.310
## integer_instructions      0.17444    0.04029   4.330
## issue_slot_utilization    0.80835    0.10362   7.801
## active_warps          0.81306    0.04117  19.750
## device_memory_read_throughput -0.44386    0.01263 -35.151
## control.flow_function_unit_utilization -0.08154    0.01248  -6.535
## max_clock_rate        0.15524    0.08202   1.893
## theoretical_flops      -0.48839    0.02526 -19.332
##              Pr(>|t|)
## (Intercept)      < 2e-16 ***
## integer_instructions  1.75e-05 ***
## issue_slot_utilization 2.79e-14 ***
## active_warps      < 2e-16 ***
## device_memory_read_throughput < 2e-16 ***
## control.flow_function_unit_utilization 1.37e-10 ***
## max_clock_rate      0.0589 .
## theoretical_flops    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04648 on 592 degrees of freedom
## Multiple R-squared:  0.9931, Adjusted R-squared:  0.993
## F-statistic: 1.215e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1  GPU= GTX-980  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.193904 -0.023957 -0.006466  0.027572  0.091767
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)     -37.61074    0.84219 -44.658
## integer_instructions -0.13924    0.04073  -3.419
## issue_slot_utilization  0.94842    0.07640  12.414
```

```

## active_warps                1.10607    0.04067   27.197
## device_memory_read_throughput -0.16448    0.02303   -7.141
## control.flow_function_unit_utilization -0.07758    0.01004   -7.728
## max_clock_rate              0.93279    0.08562   10.894
## theoretical_flops           -0.89423    0.02839  -31.501
##                               Pr(>|t|)
## (Intercept)                 < 2e-16 ***
## integer_instructions         0.000673 ***
## issue_slot_utilization       < 2e-16 ***
## active_warps                 < 2e-16 ***
## device_memory_read_throughput 2.73e-12 ***
## control.flow_function_unit_utilization 4.70e-14 ***
## max_clock_rate               < 2e-16 ***
## theoretical_flops            < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03982 on 592 degrees of freedom
## Multiple R-squared:  0.9982, Adjusted R-squared:  0.9982
## F-statistic: 4.651e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.185754 -0.029207  0.001947  0.027508  0.095389
##
## Coefficients:
##                               Estimate Std. Error t value
## (Intercept)                 -34.653504   0.779960 -44.430
## integer_instructions           0.038847   0.036094  1.076
## issue_slot_utilization        0.766903   0.073608 10.419
## active_warps                 0.908978   0.036067 25.203
## device_memory_read_throughput -0.152278   0.027484 -5.541
## control.flow_function_unit_utilization -0.065425   0.009795 -6.679
## max_clock_rate                0.666776   0.080112  8.323
## theoretical_flops            -1.022482   0.041247 -24.789
##                               Pr(>|t|)
## (Intercept)                 < 2e-16 ***
## integer_instructions          0.282
## issue_slot_utilization       < 2e-16 ***
## active_warps                 < 2e-16 ***
## device_memory_read_throughput 4.54e-08 ***
## control.flow_function_unit_utilization 5.55e-11 ***
## max_clock_rate               5.94e-16 ***
## theoretical_flops            < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03922 on 592 degrees of freedom
## Multiple R-squared:  0.9982, Adjusted R-squared:  0.9982

```

```
## F-statistic: 4.82e+04 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-680 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.216055 -0.014153  0.005891  0.023271  0.115453
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -32.06121    296.40359   -0.108  0.913900
## elapsed_cycles_sm    -1.45684     0.17891   -8.143  2.32e-15 ***
## inst_executed     14.50197     11.21972    1.293  0.196678
## inst_issued1    -10.20924     14.48816   -0.705  0.481301
## active_warps       2.02372     0.21274    9.513 < 2e-16 ***
## multiprocessor_activity -1.37561     0.18749   -7.337  7.30e-13 ***
## global_load_transactions  6.59940     60.93543    0.108  0.913794
## global_store_transactions -5.58530     82.15582   -0.068  0.945821
## executed_load.store_instructions -0.71577     1.21229   -0.590  0.555128
## integer_instructions  -4.25104     27.67042   -0.154  0.877953
## eligible_warps_per_active_cycle  0.75540     0.21830    3.460  0.000578 ***
## max_clock_rate      0.25399     0.49255    0.516  0.606286
## theoretical_flops    -1.29548     0.04496  -28.812 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04058 on 587 degrees of freedom
## Multiple R-squared:  0.9981, Adjusted R-squared:  0.9981
## F-statistic: 2.609e+04 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.217285 -0.016867  0.006502  0.022384  0.110768
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -53.44010     4.19694  -12.733 < 2e-16 ***
## elapsed_cycles_sm  0.04567     0.33077    0.138  0.89023
## inst_executed    -3.96491     1.43454   -2.764  0.00589 **
## inst_issued1     1.22748     0.87225    1.407  0.15988
## active_warps     1.81563     0.10568   17.180 < 2e-16 ***
## multiprocessor_activity  0.09468     0.32947    0.287  0.77393
## global_load_transactions  4.31299     1.09705    3.931  9.45e-05 ***
## global_store_transactions -5.65852     1.36530   -4.145  3.91e-05 ***
## executed_load.store_instructions  0.53965     0.18852    2.863  0.00435 **
## integer_instructions  2.67823     0.68363    3.918  9.99e-05 ***
```

```

## eligible_warps_per_active_cycle    0.92880    0.22510    4.126 4.22e-05 ***
## max_clock_rate                      0.23942    0.20231    1.183 0.23712
## theoretical_flops                   -1.00763    0.06273   -16.063 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04095 on 587 degrees of freedom
## Multiple R-squared:  0.9978, Adjusted R-squared:  0.9978
## F-statistic: 2.266e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.222014 -0.023307  0.008556  0.025180  0.118483
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -50.14552     5.52823   -9.071 < 2e-16 ***
## elapsed_cycles_sm    -1.24712     0.34161   -3.651 0.000285 ***
## inst_executed      -2.41501     2.04896   -1.179 0.239014
## inst_issued1        1.05959     1.19099    0.890 0.374008
## active_warps        2.48444     0.18911   13.138 < 2e-16 ***
## multiprocessor_activity -1.17446     0.34592   -3.395 0.000732 ***
## global_load_transactions  2.48480     1.61530    1.538 0.124517
## global_store_transactions -3.43778     2.04135   -1.684 0.092699 .
## executed_load.store_instructions  0.45035     0.26611    1.692 0.091110 .
## integer_instructions    1.60853     1.00330    1.603 0.109421
## eligible_warps_per_active_cycle  0.57494     0.30658    1.875 0.061243 .
## max_clock_rate        1.40482     0.47857    2.935 0.003461 **
## theoretical_flops     -1.15967     0.06804  -17.043 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04186 on 587 degrees of freedom
## Multiple R-squared:  0.9979, Adjusted R-squared:  0.9978
## F-statistic: 2.293e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Quadro threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.103499 -0.008496  0.001505  0.016093  0.106395
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -42.80357     5.26178   -8.135 2.47e-15 ***
## elapsed_cycles_sm    -0.11458     0.33726   -0.340 0.73419

```

```

## inst_executed          -4.52774      1.72194  -2.629  0.00878 **
## inst_issued1          2.34329      0.94035   2.492  0.01298 *
## active_warps           1.41142      0.18618   7.581 1.35e-13 ***
## multiprocessor_activity -0.85049      0.37288  -2.281  0.02291 *
## global_load_transactions 3.69170      1.30383   2.831  0.00479 **
## global_store_transactions -5.31002      1.62178  -3.274  0.00112 **
## executed_load.store_instructions 0.53135      0.23055   2.305  0.02153 *
## integer_instructions    2.99004      0.86184   3.469  0.00056 ***
## eligible_warps_per_active_cycle 0.29364      0.28721   1.022  0.30702
## max_clock_rate         -0.49484      0.33306  -1.486  0.13789
## theoretical_flops       -0.94184      0.07213 -13.057 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0356 on 587 degrees of freedom
## Multiple R-squared:  0.9985, Adjusted R-squared:  0.9985
## F-statistic: 3.244e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-750 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.222226 -0.009853  0.006085  0.017441  0.103907
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -54.75124     3.61134  -15.161 < 2e-16 ***
## elapsed_cycles_sm    -0.88647     0.31514   -2.813 0.005073 **
## inst_executed     -4.13714     1.27753   -3.238 0.001270 **
## inst_issued1      1.75751     0.79181    2.220 0.026826 *
## active_warps      2.25480     0.07614   29.615 < 2e-16 ***
## multiprocessor_activity -0.81255     0.31283   -2.597 0.009628 **
## global_load_transactions 4.83499     0.91829   5.265 1.97e-07 ***
## global_store_transactions -6.33887     1.14626  -5.530 4.82e-08 ***
## executed_load.store_instructions 0.65212     0.17262   3.778 0.000174 ***
## integer_instructions  2.85571     0.60321   4.734 2.76e-06 ***
## eligible_warps_per_active_cycle 0.79307     0.19646   4.037 6.14e-05 ***
## max_clock_rate      0.46980     0.18836   2.494 0.012900 *
## theoretical_flops   -1.35184     0.04481 -30.170 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03687 on 587 degrees of freedom
## Multiple R-squared:  0.9957, Adjusted R-squared:  0.9956
## F-statistic: 1.13e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-980 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##

```

```

## Residuals:
##      Min        1Q      Median        3Q        Max
## -0.218122 -0.011986  0.004405  0.018871  0.120285
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -31.43398      4.95130   -6.349 4.35e-10 ***
## elapsed_cycles_sm    -0.84251      0.18480   -4.559 6.26e-06 ***
## inst_executed     -1.75180      1.32898   -1.318 0.187967
## inst_issued1       2.55829      0.74940    3.414 0.000685 ***
## active_warps      -0.12476      0.36962   -0.338 0.735822
## multiprocessor_activity -0.81435      0.18807   -4.330 1.75e-05 ***
## global_load_transactions  0.87213      1.09935    0.793 0.427917
## global_store_transactions -0.81440      1.42055   -0.573 0.566659
## executed_load.store_instructions  0.71545      0.16251    4.403 1.27e-05 ***
## integer_instructions  0.38843      0.71442    0.544 0.586860
## eligible_warps_per_active_cycle  0.35305      0.20464    1.725 0.085017 .
## max_clock_rate      1.52713      0.21640    7.057 4.82e-12 ***
## theoretical_flops    -1.16753      0.02982  -39.150 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03685 on 587 degrees of freedom
## Multiple R-squared:  0.9985, Adjusted R-squared:  0.9984
## F-statistic: 3.171e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-970 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min        1Q      Median        3Q        Max
## -0.223605 -0.006322  0.002285  0.013212  0.109469
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -33.32808      4.19676   -7.941 1.02e-14 ***
## elapsed_cycles_sm    0.41267      0.28856    1.430 0.15322
## inst_executed     -2.93534      1.23962   -2.368 0.01821 *
## inst_issued1       2.36322      0.70880    3.334 0.00091 ***
## active_warps      -0.10517      0.29799   -0.353 0.72427
## multiprocessor_activity  0.42642      0.28773    1.482 0.13888
## global_load_transactions -0.23570      1.04088   -0.226 0.82094
## global_store_transactions  0.14762      1.31781    0.112 0.91085
## executed_load.store_instructions  0.66380      0.15593    4.257 2.41e-05 ***
## integer_instructions  0.72349      0.62664    1.155 0.24874
## eligible_warps_per_active_cycle  0.62427      0.19312    3.233 0.00130 **
## max_clock_rate      1.04923      0.16984    6.178 1.22e-09 ***
## theoretical_flops    -1.33371      0.02634  -50.642 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03406 on 587 degrees of freedom

```

```

## Multiple R-squared:  0.9987, Adjusted R-squared:  0.9987
## F-statistic: 3.73e+04 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1  GPU= GTX-680  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.199016 -0.048237  0.007077  0.036953  0.143545
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -31.886049   0.520675  -61.240 < 2e-16
## active_warps      1.766463   0.033481   52.760 < 2e-16
## integer_instructions -0.901102   0.040669  -22.157 < 2e-16
## multiprocessor_activity  0.020635   0.054771   0.377  0.706
## executed_load.store_instructions  0.227250   0.023301   9.753 < 2e-16
## eligible_warps_per_active_cycle  0.548130   0.030547  17.944 < 2e-16
## max_clock_rate    0.337343   0.049292   6.844 1.93e-11
## theoretical_flops  -0.941220   0.006048 -155.617 < 2e-16
##
## (Intercept)          ***
## active_warps          ***
## integer_instructions   ***
## multiprocessor_activity
## executed_load.store_instructions ***
## eligible_warps_per_active_cycle ***
## max_clock_rate         ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05116 on 592 degrees of freedom
## Multiple R-squared:  0.997, Adjusted R-squared:  0.997
## F-statistic: 2.811e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1  GPU= Tesla-K40  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.246168 -0.046239  0.003474  0.056624  0.175608
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -31.38504   0.88677 -35.393 < 2e-16 ***
## active_warps      1.01793   0.04305  23.644 < 2e-16 ***
## integer_instructions  0.16746   0.04365   3.836 0.000138 ***
## multiprocessor_activity  0.18223   0.09305   1.958 0.050650 .
## executed_load.store_instructions -0.26612   0.03123  -8.520 < 2e-16 ***

```



```

## eligible_warps_per_active_cycle    0.10841    0.04614    2.350 0.019124 *
## max_clock_rate                     0.42885    0.08385    5.114 4.26e-07 ***
## theoretical_flops                   -0.91472    0.01008 -90.780 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08732 on 592 degrees of freedom
## Multiple R-squared:  0.9901, Adjusted R-squared:  0.99
## F-statistic: 8477 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.213716 -0.049206 -0.008917  0.064666  0.163837
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -23.04609     1.54262  -14.940 < 2e-16 ***
## active_warps      0.62653     0.06966   8.994 < 2e-16 ***
## integer_instructions  0.58034     0.07195   8.066 4.05e-15 ***
## multiprocessor_activity  0.06635     0.09611   0.690  0.49026
## executed_load.store_instructions -0.36680     0.03459 -10.604 < 2e-16 ***
## eligible_warps_per_active_cycle -0.35644     0.07993  -4.460 9.83e-06 ***
## max_clock_rate    -0.44392     0.15974  -2.779  0.00562 **
## theoretical_flops  -0.85214     0.01413 -60.299 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08923 on 592 degrees of freedom
## Multiple R-squared:  0.9902, Adjusted R-squared:  0.9901
## F-statistic: 8587 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= Quadro threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.22360 -0.03891 -0.00501  0.03435  0.50718
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -45.42703     2.71977 -16.703 < 2e-16 ***
## active_warps      0.63141     0.06144  10.277 < 2e-16 ***
## integer_instructions  0.61892     0.06719   9.211 < 2e-16 ***
## multiprocessor_activity  5.33475     0.52169  10.226 < 2e-16 ***
## executed_load.store_instructions -0.50285     0.03177 -15.830 < 2e-16 ***
## eligible_warps_per_active_cycle -0.40365     0.07182  -5.620 2.94e-08 ***
## max_clock_rate    -0.55456     0.11737  -4.725 2.88e-06 ***

```

```

## theoretical_flops          -0.77806      0.01294 -60.114 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07583 on 592 degrees of freedom
## Multiple R-squared:  0.9931, Adjusted R-squared:  0.993
## F-statistic: 1.219e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-750 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.238868 -0.049411 -0.006312  0.052561  0.184152
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -30.46830     0.89965  -33.867 < 2e-16 ***
## active_warps      0.83026     0.05689   14.594 < 2e-16 ***
## integer_instructions  0.33020     0.04762    6.934 1.07e-11 ***
## multiprocessor_activity  0.09697     0.09394    1.032  0.302
## executed_load.store_instructions -0.23728     0.03511   -6.758 3.36e-11 ***
## eligible_warps_per_active_cycle  0.06194     0.04584    1.351  0.177
## max_clock_rate     0.40964     0.08467    4.838 1.67e-06 ***
## theoretical_flops   -0.70132     0.05143  -13.637 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08785 on 592 degrees of freedom
## Multiple R-squared:  0.9753, Adjusted R-squared:  0.975
## F-statistic: 3340 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-980 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.19848 -0.04240  0.01023  0.03870  0.10563
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -32.941517   0.472122  -69.773 < 2e-16
## active_warps    0.831061   0.023305   35.660 < 2e-16
## integer_instructions -0.014028   0.023605   -0.594  0.553
## multiprocessor_activity -0.020947   0.049257   -0.425  0.671
## executed_load.store_instructions  0.143791   0.020429    7.038 5.40e-12
## eligible_warps_per_active_cycle  0.164580   0.024185    6.805 2.48e-11
## max_clock_rate    1.027346   0.046954   21.880 < 2e-16
## theoretical_flops  -0.893561   0.005326 -167.772 < 2e-16
##

```

```

## (Intercept) ***
## active_warps ***
## integer_instructions
## multiprocessor_activity
## executed_load.store_instructions ***
## eligible_warps_per_active_cycle ***
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.04603 on 592 degrees of freedom
## Multiple R-squared:  0.9976, Adjusted R-squared:  0.9975
## F-statistic: 3.48e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= hotspotOpt1 GPU= GTX-970 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.216532 -0.025093  0.007435  0.021860  0.110041
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -33.29082    0.368399  -90.366  <2e-16
## active_warps     0.730900    0.018430   39.659  <2e-16
## integer_instructions  0.014767    0.018205    0.811    0.418
## multiprocessor_activity  0.000577    0.038556    0.015    0.988
## executed_load.store_instructions  0.225376    0.016243   13.876  <2e-16
## eligible_warps_per_active_cycle  0.316824    0.019331   16.389  <2e-16
## max_clock_rate    1.050535    0.036497   28.784  <2e-16
## theoretical_flops   -1.168465    0.006309 -185.217  <2e-16
##
## (Intercept) ***
## active_warps ***
## integer_instructions
## multiprocessor_activity
## executed_load.store_instructions ***
## eligible_warps_per_active_cycle ***
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03597 on 592 degrees of freedom
## Multiple R-squared:  0.9985, Adjusted R-squared:  0.9985
## F-statistic: 5.732e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)

```

```
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.17630 -0.02740 -0.00852  0.02545  0.78709
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    11.6742467    2.0299213    5.751 1.43e-08
## elapsed_cycles_sm    0.0432963    0.0708010    0.612  0.541
## control_flow_instructions    0.7760610    0.0784350    9.894 < 2e-16
## inst_issued1   -2.4876422    0.3002137   -8.286 7.94e-16
## active_cycles   -0.0317117    0.0637646   -0.497  0.619
## device_memory_read_throughput    0.0009634    0.0054770    0.176  0.860
## device_memory_write_throughput -0.0006544    0.0061568   -0.106  0.915
## l2_throughput_.reads. -0.0068122    0.0066624   -1.022  0.307
## system_memory_write_throughput -0.0022949    0.0014167   -1.620  0.106
## executed_load.store_instructions      NA         NA         NA     NA
## ecc_transactions -0.0002254    0.0003061   -0.736  0.462
## max_clock_rate  -1.4122816    0.1491001   -9.472 < 2e-16
## theoretical_flops    0.0180828    0.0594105    0.304  0.761
##
## (Intercept)      ***
## elapsed_cycles_sm
## control_flow_instructions      ***
## inst_issued1      ***
## active_cycles
## device_memory_read_throughput
## device_memory_write_throughput
## l2_throughput_.reads.
## system_memory_write_throughput
## executed_load.store_instructions
## ecc_transactions
## max_clock_rate      ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07402 on 588 degrees of freedom
## Multiple R-squared:  0.9596, Adjusted R-squared:  0.9589
## F-statistic: 1270 on 11 and 588 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= lud_diagonal GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.17707 -0.02839 -0.01299  0.03251  0.78665
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
```

```

## (Intercept)                1.815e+00  4.373e+00  0.415  0.67830
## elapsed_cycles_sm          7.020e-02  7.938e-02  0.884  0.37688
## control.flow.instructions  6.286e-01  1.298e-01  4.844  1.63e-06
## inst_issued1              -2.234e+00  4.222e-01 -5.291  1.72e-07
## active_cycles              -5.631e-02  7.037e-02 -0.800  0.42393
## device_memory_read_throughput -5.166e-05  5.650e-03 -0.009  0.99271
## device_memory_write_throughput 5.374e-04  6.361e-03  0.084  0.93270
## l2_throughput_.reads.      -6.925e-03  6.804e-03 -1.018  0.30920
## system_memory_write_throughput -4.298e-03  1.961e-03 -2.192  0.02878
## executed_load.store.instructions 1.322e+00  4.074e-01  3.246  0.00124
## ecc_transactions           1.036e-04  5.492e-04  0.189  0.85050
## max_clock_rate             -1.397e+00  1.615e-01 -8.647  < 2e-16
## theoretical_flops          -8.007e-03  6.815e-02 -0.117  0.90651
##
## (Intercept)
## elapsed_cycles_sm
## control.flow.instructions    ***
## inst_issued1                ***
## active_cycles
## device_memory_read_throughput
## device_memory_write_throughput
## l2_throughput_.reads.
## system_memory_write_throughput *
## executed_load.store.instructions **
## ecc_transactions
## max_clock_rate              ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07498 on 587 degrees of freedom
## Multiple R-squared:  0.9535, Adjusted R-squared:  0.9526
## F-statistic: 1003 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.17660 -0.02738 -0.01276  0.03171  0.78670
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.7067277   4.9841362  -0.342   0.7321
## elapsed_cycles_sm  0.0830597   0.0772373   1.075   0.2826
## control.flow.instructions  0.0375350   0.4401541   0.085   0.9321
## inst_issued1    -1.0264362   0.9613163  -1.068   0.2861
## active_cycles    -0.0711763   0.0692367  -1.028   0.3044
## device_memory_read_throughput  0.0014382   0.0055306   0.260   0.7949
## device_memory_write_throughput -0.0009093   0.0062432  -0.146   0.8843
## l2_throughput_.reads. -0.0057736   0.0068870  -0.838   0.4022
## system_memory_write_throughput -0.0024009   0.0014340  -1.674   0.0946 .

```

```

## executed_load.store_instructions  0.6465448  0.6161657   1.049   0.2945
## ecc_transactions                  0.0001684  0.0004946   0.341   0.7335
## max_clock_rate                    -0.9036614  0.3807783  -2.373   0.0180 *
## theoretical_flops                 -0.0501720  0.0730304  -0.687   0.4924
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07488 on 587 degrees of freedom
## Multiple R-squared:  0.9369, Adjusted R-squared:  0.9356
## F-statistic: 726.8 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.17720 -0.02228 -0.00779  0.01854  0.78588
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      1.785e+00  3.693e+00   0.483 0.629104
## elapsed_cycles_sm    7.174e-02  6.492e-02   1.105 0.269596
## control.flow_instructions  7.664e-01  7.207e-02  10.635 < 2e-16
## inst_issued1      -2.487e+00  2.482e-01 -10.019 < 2e-16
## active_cycles      -6.502e-02  5.713e-02  -1.138 0.255517
## device_memory_read_throughput  3.244e-03  4.549e-03   0.713 0.476054
## device_memory_write_throughput -2.426e-03  5.121e-03  -0.474 0.635829
## l2_throughput_.reads. -5.954e-03  5.597e-03  -1.064 0.287896
## system_memory_write_throughput  2.701e-04  1.575e-03   0.171 0.863950
## executed_load.store_instructions  1.584e+00  4.177e-01   3.791 0.000165
## ecc_transactions     -6.750e-06  3.149e-04  -0.021 0.982905
## max_clock_rate      -1.514e+00  1.494e-01 -10.129 < 2e-16
## theoretical_flops    -1.740e-03  5.345e-02  -0.033 0.974044
##
## (Intercept)
## elapsed_cycles_sm
## control.flow_instructions      ***
## inst_issued1                  ***
## active_cycles
## device_memory_read_throughput
## device_memory_write_throughput
## l2_throughput_.reads.
## system_memory_write_throughput
## executed_load.store_instructions ***
## ecc_transactions
## max_clock_rate                ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0604 on 587 degrees of freedom
## Multiple R-squared:  0.9705, Adjusted R-squared:  0.9699

```

```

## F-statistic: 1611 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-750 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.18720 -0.02966 -0.00491  0.02164  0.78931
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.152e+00  5.677e+00  -0.379  0.704792
## elapsed_cycles_sm      8.137e-02  7.979e-02   1.020  0.308233
## control.flow_instructions  7.250e-01  8.927e-02   8.121  2.74e-15
## inst_issued1    -1.964e+00  5.490e-01  -3.577  0.000376
## active_cycles    -3.237e-02  7.217e-02  -0.448  0.653978
## device_memory_read_throughput  3.380e-03  6.772e-03   0.499  0.617933
## device_memory_write_throughput -3.304e-02  1.565e-02  -2.111  0.035167
## l2_throughput_.reads.    -8.508e-03  6.947e-03  -1.225  0.221193
## system_memory_write_throughput -2.229e-03  1.314e-03  -1.697  0.090256
## executed_load.store_instructions  1.538e+00  4.726e-01   3.255  0.001199
## ecc_transactions      6.266e-05  3.609e-04   0.174  0.862223
## max_clock_rate    -1.525e+00  1.999e-01  -7.631  9.47e-14
## theoretical_flops    -9.094e-02  1.464e-01  -0.621  0.534622
##
## (Intercept)
## elapsed_cycles_sm
## control.flow_instructions      ***
## inst_issued1                  ***
## active_cycles
## device_memory_read_throughput
## device_memory_write_throughput  *
## l2_throughput_.reads.
## system_memory_write_throughput  .
## executed_load.store_instructions **
## ecc_transactions
## max_clock_rate                ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06948 on 587 degrees of freedom
## Multiple R-squared:  0.9576, Adjusted R-squared:  0.9568
## F-statistic: 1105 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-980 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

```
## -0.17766 -0.02676 -0.00841 0.02329 0.78880
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      1.289136   8.286812   0.156  0.87643
## elapsed_cycles_sm 0.026174   0.085405   0.306  0.75936
## control_flow_instructions 0.683574   0.110836   6.167 1.29e-09 ***
## inst_issued1     -2.242878   0.824499  -2.720  0.00672 **
## active_cycles     -0.007596   0.074002  -0.103  0.91828
## device_memory_read_throughput 0.002688   0.005533   0.486  0.62734
## device_memory_write_throughput -0.001638   0.006200  -0.264  0.79169
## l2_throughput_.reads. -0.005275   0.007055  -0.748  0.45489
## system_memory_write_throughput -0.002184   0.001347  -1.622  0.10543
## executed_load.store_instructions 1.554311   1.057197   1.470  0.14204
## ecc_transactions  -0.000271   0.000344  -0.788  0.43119
## max_clock_rate     -1.586707   0.621184  -2.554  0.01089 *
## theoretical_flops   0.017093   0.061790   0.277  0.78216
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07126 on 587 degrees of freedom
## Multiple R-squared:  0.953, Adjusted R-squared:  0.952
## F-statistic: 991.1 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.176015 -0.022370 -0.008249  0.025075  0.200693
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      6.863e+00  4.364e+00   1.573   0.116
## elapsed_cycles_sm 1.174e-02  8.165e-02   0.144   0.886
## control_flow_instructions 7.219e-01  8.860e-02   8.148 2.24e-15
## inst_issued1     -2.746e+00  3.441e-01  -7.979 7.78e-15
## active_cycles     -3.087e-02  7.178e-02  -0.430   0.667
## device_memory_read_throughput 1.687e-03  4.475e-03   0.377   0.706
## device_memory_write_throughput -1.505e-03  5.048e-03  -0.298   0.766
## l2_throughput_.reads. -4.322e-03  6.292e-03  -0.687   0.492
## system_memory_write_throughput -2.206e-03  1.156e-03  -1.907   0.057
## executed_load.store_instructions 9.820e-01  5.252e-01   1.870   0.062
## ecc_transactions  -9.598e-05  3.150e-04  -0.305   0.761
## max_clock_rate     -1.277e+00  2.922e-01  -4.369 1.48e-05
## theoretical_flops   3.941e-02  8.214e-02   0.480   0.632
##
## (Intercept)
## elapsed_cycles_sm
## control_flow_instructions ***
## inst_issued1 ***
## active_cycles
```



```

## device_memory_read_throughput
## device_memory_write_throughput
## l2_throughput_reads.
## system_memory_write_throughput .
## executed_load.store_instructions .
## ecc_transactions
## max_clock_rate          ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06119 on 587 degrees of freedom
## Multiple R-squared:  0.9655, Adjusted R-squared:  0.9648
## F-statistic: 1369 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.20055 -0.04714 -0.00511  0.05153  0.82445
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -5.7957811   0.6600274  -8.781   <2e-16 ***
## elapsed_cycles_sm    0.3285478   0.0232204  14.149   <2e-16 ***
## active_cycles    -0.0496805   0.0494923  -1.004   0.3159
## device_memory_read_throughput -0.0007696   0.0027603  -0.279   0.7805
## system_memory_write_throughput -0.0015200   0.0015415  -0.986   0.3245
## ecc_transactions    0.0005778   0.0002680   2.156   0.0315 *
## max_clock_rate    -1.2411165   0.0385187 -32.221   <2e-16 ***
## theoretical_flops   -0.2696708   0.0185361 -14.548   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08075 on 592 degrees of freedom
## Multiple R-squared:  0.9516, Adjusted R-squared:  0.951
## F-statistic: 1663 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.29191 -0.07626  0.00897  0.04700  0.85173
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -1.341e+01  5.370e-01 -24.973 < 2e-16 ***
## elapsed_cycles_sm    1.764e-01  2.583e-02   6.831 2.10e-11 ***

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## active_cycles          6.140e-01  3.109e-02  19.749 < 2e-16 ***
## device_memory_read_throughput -1.206e-02  3.211e-03  -3.757 0.000189 ***
## system_memory_write_throughput -7.497e-03  2.511e-03  -2.986 0.002945 **
## ecc_transactions        1.098e-03  4.049e-04   2.711 0.006895 **
## max_clock_rate         -8.299e-01  3.547e-02 -23.395 < 2e-16 ***
## theoretical_flops      -1.674e-01  2.126e-02  -7.873 1.66e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09676 on 592 degrees of freedom
## Multiple R-squared:  0.9219, Adjusted R-squared:  0.921
## F-statistic: 998.4 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28911 -0.07688  0.00875  0.04548  0.84999
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.346e+01  5.316e-01 -25.329 < 2e-16 ***
## elapsed_cycles_sm  1.721e-01  2.604e-02   6.610 8.60e-11 ***
## active_cycles    6.186e-01  3.085e-02  20.054 < 2e-16 ***
## device_memory_read_throughput -1.194e-02  3.195e-03  -3.739 0.000203 ***
## system_memory_write_throughput -4.001e-03  1.847e-03  -2.166 0.030704 *
## ecc_transactions  2.128e-04  3.827e-04   0.556 0.578381
## max_clock_rate   -8.260e-01  3.499e-02 -23.608 < 2e-16 ***
## theoretical_flops -1.643e-01  2.145e-02  -7.658 7.76e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0967 on 592 degrees of freedom
## Multiple R-squared:  0.8939, Adjusted R-squared:  0.8927
## F-statistic: 712.8 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28415 -0.03176  0.00271  0.04295  0.85508
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.319e+01  5.062e-01 -26.054 < 2e-16 ***
## elapsed_cycles_sm  2.001e-01  2.367e-02   8.453 < 2e-16 ***
## active_cycles    6.102e-01  2.848e-02  21.429 < 2e-16 ***
## device_memory_read_throughput -1.080e-02  2.880e-03  -3.751 0.000194 ***

```

```

## system_memory_write_throughput -2.077e-03  2.243e-03  -0.926  0.354724
## ecc_transactions                -4.069e-04  4.425e-04  -0.920  0.358128
## max_clock_rate                  -9.074e-01  4.100e-02 -22.131  < 2e-16 ***
## theoretical_flops               -1.877e-01  1.933e-02  -9.712  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0868 on 592 degrees of freedom
## Multiple R-squared:  0.9386, Adjusted R-squared:  0.9379
## F-statistic: 1293 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.16528 -0.02874 -0.00580  0.04148  0.82267
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -6.5460758   0.7207770   -9.082  < 2e-16 ***
## elapsed_cycles_sm -0.0356354   0.0262574   -1.357   0.1752
## active_cycles     0.2491907   0.0368562    6.761 3.29e-11 ***
## device_memory_read_throughput -0.0146148   0.0061240   -2.386   0.0173 *
## system_memory_write_throughput -0.0018646   0.0014226   -1.311   0.1905
## ecc_transactions  0.0023733   0.0002797    8.485  < 2e-16 ***
## max_clock_rate   -0.9058531   0.0307132  -29.494  < 2e-16 ***
## theoretical_flops -0.4183034   0.0248802  -16.813  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07554 on 592 degrees of freedom
## Multiple R-squared:  0.9495, Adjusted R-squared:  0.9489
## F-statistic: 1589 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28678 -0.03402  0.00734  0.03716  0.86962
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.367e+01  1.463e+00  -9.350  < 2e-16 ***
## elapsed_cycles_sm  1.292e-01  1.027e-01   1.259  0.20864
## active_cycles     7.292e-01  7.577e-02   9.623  < 2e-16 ***
## device_memory_read_throughput -8.456e-03  3.034e-03  -2.787  0.00548 **
## system_memory_write_throughput -3.188e-03  1.684e-03  -1.893  0.05886 .
## ecc_transactions  4.733e-04  3.017e-04   1.569  0.11722

```

```

## max_clock_rate          -8.727e-01  1.195e-01  -7.302 9.18e-13 ***
## theoretical_flops       -1.439e-01  6.754e-02  -2.131 0.03351 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0896 on 592 degrees of freedom
## Multiple R-squared:  0.925, Adjusted R-squared:  0.9241
## F-statistic: 1043 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.25383 -0.04750  0.00503  0.04169  0.17103
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -9.0023060   0.8874680  -10.144 < 2e-16 ***
## elapsed_cycles_sm -0.1439829   0.0483488   -2.978 0.003020 **
## active_cycles     0.7324165   0.0247707   29.568 < 2e-16 ***
## device_memory_read_throughput -0.0055941   0.0025504   -2.193 0.028664 *
## system_memory_write_throughput -0.0019786   0.0014179   -1.395 0.163400
## ecc_transactions  0.0008497   0.0002550    3.333 0.000913 ***
## max_clock_rate   -1.0160401   0.0413199  -24.590 < 2e-16 ***
## theoretical_flops  0.1538117   0.0470045    3.272 0.001129 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07513 on 592 degrees of freedom
## Multiple R-squared:  0.9476, Adjusted R-squared:  0.9469
## F-statistic: 1528 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-680 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.17630 -0.02740 -0.00852  0.02545  0.78709
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    11.6742467   2.0299213    5.751 1.43e-08
## elapsed_cycles_sm  0.0432963   0.0708010    0.612  0.541
## control_flow_instructions  0.7760610   0.0784350   9.894 < 2e-16
## inst_issued1    -2.4876422   0.3002137  -8.286 7.94e-16
## active_cycles   -0.0317117   0.0637646   -0.497  0.619
## device_memory_read_throughput  0.0009634   0.0054770    0.176  0.860
## device_memory_write_throughput -0.0006544   0.0061568   -0.106  0.915
## l2_throughput_.reads. -0.0068122   0.0066624   -1.022  0.307

```

```

## system_memory_write_throughput -0.0022949 0.0014167 -1.620 0.106
## executed_load.store_instructions NA NA NA NA
## ecc_transactions -0.0002254 0.0003061 -0.736 0.462
## max_clock_rate -1.4122816 0.1491001 -9.472 < 2e-16
## theoretical_flops 0.0180828 0.0594105 0.304 0.761
##
## (Intercept) ***
## elapsed_cycles_sm
## control.flow.instructions ***
## inst_issued1 ***
## active_cycles
## device_memory_read_throughput
## device_memory_write_throughput
## l2_throughput_reads.
## system_memory_write_throughput
## executed_load.store_instructions
## ecc_transactions
## max_clock_rate ***
## theoretical_flops
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07402 on 588 degrees of freedom
## Multiple R-squared: 0.9596, Adjusted R-squared: 0.9589
## F-statistic: 1270 on 11 and 588 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= lud_diagonal GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
## Min 1Q Median 3Q Max
## -0.17707 -0.02839 -0.01299 0.03251 0.78665
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1.815e+00 4.373e+00 0.415 0.67830
## elapsed_cycles_sm 7.020e-02 7.938e-02 0.884 0.37688
## control.flow.instructions 6.286e-01 1.298e-01 4.844 1.63e-06
## inst_issued1 -2.234e+00 4.222e-01 -5.291 1.72e-07
## active_cycles -5.631e-02 7.037e-02 -0.800 0.42393
## device_memory_read_throughput -5.166e-05 5.650e-03 -0.009 0.99271
## device_memory_write_throughput 5.374e-04 6.361e-03 0.084 0.93270
## l2_throughput_reads. -6.925e-03 6.804e-03 -1.018 0.30920
## system_memory_write_throughput -4.298e-03 1.961e-03 -2.192 0.02878
## executed_load.store_instructions 1.322e+00 4.074e-01 3.246 0.00124
## ecc_transactions 1.036e-04 5.492e-04 0.189 0.85050
## max_clock_rate -1.397e+00 1.615e-01 -8.647 < 2e-16
## theoretical_flops -8.007e-03 6.815e-02 -0.117 0.90651
##
## (Intercept)

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## elapsed_cycles_sm
## control.flow_instructions      ***
## inst_issued1                  ***
## active_cycles
## device_memory_read_throughput
## device_memory_write_throughput
## l2_throughput_reads.
## system_memory_write_throughput *
## executed_load.store_instructions **
## ecc_transactions
## max_clock_rate                ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07498 on 587 degrees of freedom
## Multiple R-squared:  0.9535, Adjusted R-squared:  0.9526
## F-statistic: 1003 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.17660 -0.02738 -0.01276  0.03171  0.78670
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.7067277   4.9841362  -0.342   0.7321
## elapsed_cycles_sm    0.0830597   0.0772373   1.075   0.2826
## control.flow_instructions    0.0375350   0.4401541   0.085   0.9321
## inst_issued1    -1.0264362   0.9613163  -1.068   0.2861
## active_cycles    -0.0711763   0.0692367  -1.028   0.3044
## device_memory_read_throughput    0.0014382   0.0055306   0.260   0.7949
## device_memory_write_throughput   -0.0009093   0.0062432  -0.146   0.8843
## l2_throughput_reads.   -0.0057736   0.0068870  -0.838   0.4022
## system_memory_write_throughput   -0.0024009   0.0014340  -1.674   0.0946 .
## executed_load.store_instructions  0.6465448   0.6161657   1.049   0.2945
## ecc_transactions    0.0001684   0.0004946   0.341   0.7335
## max_clock_rate    -0.9036614   0.3807783  -2.373   0.0180 *
## theoretical_flops    -0.0501720   0.0730304  -0.687   0.4924
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07488 on 587 degrees of freedom
## Multiple R-squared:  0.9369, Adjusted R-squared:  0.9356
## F-statistic: 726.8 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Quadro threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)

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##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.17720 -0.02228 -0.00779  0.01854  0.78588
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      1.785e+00  3.693e+00   0.483 0.629104
## elapsed_cycles_sm  7.174e-02  6.492e-02   1.105 0.269596
## control_flow_instructions  7.664e-01  7.207e-02  10.635 < 2e-16
## inst_issued1     -2.487e+00  2.482e-01 -10.019 < 2e-16
## active_cycles     -6.502e-02  5.713e-02  -1.138 0.255517
## device_memory_read_throughput  3.244e-03  4.549e-03   0.713 0.476054
## device_memory_write_throughput -2.426e-03  5.121e-03  -0.474 0.635829
## l2_throughput_.reads. -5.954e-03  5.597e-03  -1.064 0.287896
## system_memory_write_throughput  2.701e-04  1.575e-03   0.171 0.863950
## executed_load.store_instructions  1.584e+00  4.177e-01   3.791 0.000165
## ecc_transactions   -6.750e-06  3.149e-04  -0.021 0.982905
## max_clock_rate     -1.514e+00  1.494e-01 -10.129 < 2e-16
## theoretical_flops   -1.740e-03  5.345e-02  -0.033 0.974044
##
## (Intercept)
## elapsed_cycles_sm
## control_flow_instructions ***
## inst_issued1 ***
## active_cycles
## device_memory_read_throughput
## device_memory_write_throughput
## l2_throughput_.reads.
## system_memory_write_throughput
## executed_load.store_instructions ***
## ecc_transactions
## max_clock_rate ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0604 on 587 degrees of freedom
## Multiple R-squared:  0.9705, Adjusted R-squared:  0.9699
## F-statistic: 1611 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-750 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.18720 -0.02966 -0.00491  0.02164  0.78931
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -2.152e+00  5.677e+00  -0.379 0.704792
## elapsed_cycles_sm  8.137e-02  7.979e-02   1.020 0.308233

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## control.flow_instructions      7.250e-01  8.927e-02   8.121  2.74e-15
## inst_issued1                  -1.964e+00  5.490e-01  -3.577  0.000376
## active_cycles                 -3.237e-02  7.217e-02  -0.448  0.653978
## device_memory_read_throughput  3.380e-03  6.772e-03   0.499  0.617933
## device_memory_write_throughput -3.304e-02  1.565e-02  -2.111  0.035167
## l2_throughput_.reads.         -8.508e-03  6.947e-03  -1.225  0.221193
## system_memory_write_throughput -2.229e-03  1.314e-03  -1.697  0.090256
## executed_load.store_instructions 1.538e+00  4.726e-01   3.255  0.001199
## ecc_transactions              6.266e-05  3.609e-04   0.174  0.862223
## max_clock_rate                -1.525e+00  1.999e-01  -7.631  9.47e-14
## theoretical_flops             -9.094e-02  1.464e-01  -0.621  0.534622
##
## (Intercept)
## elapsed_cycles_sm
## control.flow_instructions      ***
## inst_issued1                  ***
## active_cycles
## device_memory_read_throughput
## device_memory_write_throughput *
## l2_throughput_.reads.
## system_memory_write_throughput .
## executed_load.store_instructions **
## ecc_transactions
## max_clock_rate                ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06948 on 587 degrees of freedom
## Multiple R-squared:  0.9576, Adjusted R-squared:  0.9568
## F-statistic: 1105 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-980 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.17766 -0.02676 -0.00841  0.02329  0.78880
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.289136    8.286812   0.156  0.87643
## elapsed_cycles_sm  0.026174    0.085405   0.306  0.75936
## control.flow_instructions  0.683574    0.110836   6.167 1.29e-09 ***
## inst_issued1   -2.242878    0.824499  -2.720  0.00672 **
## active_cycles   -0.007596    0.074002  -0.103  0.91828
## device_memory_read_throughput  0.002688    0.005533   0.486  0.62734
## device_memory_write_throughput -0.001638    0.006200  -0.264  0.79169
## l2_throughput_.reads. -0.005275    0.007055  -0.748  0.45489
## system_memory_write_throughput -0.002184    0.001347  -1.622  0.10543
## executed_load.store_instructions 1.554311    1.057197   1.470  0.14204
## ecc_transactions -0.000271    0.000344  -0.788  0.43119

```



```

## max_clock_rate          -1.586707    0.621184  -2.554  0.01089 *
## theoretical_flops       0.017093    0.061790   0.277  0.78216
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07126 on 587 degrees of freedom
## Multiple R-squared:  0.953, Adjusted R-squared:  0.952
## F-statistic: 991.1 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-970 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.176015 -0.022370 -0.008249  0.025075  0.200693
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      6.863e+00  4.364e+00   1.573   0.116
## elapsed_cycles_sm  1.174e-02  8.165e-02   0.144   0.886
## control.flow_instructions  7.219e-01  8.860e-02   8.148 2.24e-15
## inst_issued1     -2.746e+00  3.441e-01  -7.979 7.78e-15
## active_cycles    -3.087e-02  7.178e-02  -0.430   0.667
## device_memory_read_throughput  1.687e-03  4.475e-03   0.377   0.706
## device_memory_write_throughput -1.505e-03  5.048e-03  -0.298   0.766
## l2_throughput_.reads. -4.322e-03  6.292e-03  -0.687   0.492
## system_memory_write_throughput -2.206e-03  1.156e-03  -1.907   0.057
## executed_load.store_instructions  9.820e-01  5.252e-01   1.870   0.062
## ecc_transactions  -9.598e-05  3.150e-04  -0.305   0.761
## max_clock_rate    -1.277e+00  2.922e-01  -4.369 1.48e-05
## theoretical_flops   3.941e-02  8.214e-02   0.480   0.632
##
## (Intercept)
## elapsed_cycles_sm
## control.flow_instructions ***
## inst_issued1 ***
## active_cycles
## device_memory_read_throughput
## device_memory_write_throughput
## l2_throughput_.reads.
## system_memory_write_throughput .
## executed_load.store_instructions .
## ecc_transactions
## max_clock_rate ***
## theoretical_flops
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06119 on 587 degrees of freedom
## Multiple R-squared:  0.9655, Adjusted R-squared:  0.9648
## F-statistic: 1369 on 12 and 587 DF,  p-value: < 2.2e-16
##

```

```

## [1] "kernel= lud_diagonal GPU= GTX-680 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.20055 -0.04714 -0.00511  0.05153  0.82445
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -5.7957811   0.6600274  -8.781  <2e-16 ***
## elapsed_cycles_sm    0.3285478   0.0232204  14.149  <2e-16 ***
## active_cycles    -0.0496805   0.0494923  -1.004   0.3159
## device_memory_read_throughput -0.0007696   0.0027603  -0.279   0.7805
## system_memory_write_throughput -0.0015200   0.0015415  -0.986   0.3245
## ecc_transactions    0.0005778   0.0002680   2.156   0.0315 *
## max_clock_rate    -1.2411165   0.0385187 -32.221  <2e-16 ***
## theoretical_flops   -0.2696708   0.0185361 -14.548  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08075 on 592 degrees of freedom
## Multiple R-squared:  0.9516, Adjusted R-squared:  0.951
## F-statistic: 1663 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.29191 -0.07626  0.00897  0.04700  0.85173
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.341e+01  5.370e-01 -24.973  < 2e-16 ***
## elapsed_cycles_sm    1.764e-01  2.583e-02   6.831 2.10e-11 ***
## active_cycles    6.140e-01  3.109e-02  19.749  < 2e-16 ***
## device_memory_read_throughput -1.206e-02  3.211e-03  -3.757 0.000189 ***
## system_memory_write_throughput -7.497e-03  2.511e-03  -2.986 0.002945 **
## ecc_transactions    1.098e-03  4.049e-04   2.711 0.006895 **
## max_clock_rate    -8.299e-01  3.547e-02 -23.395  < 2e-16 ***
## theoretical_flops   -1.674e-01  2.126e-02  -7.873 1.66e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09676 on 592 degrees of freedom
## Multiple R-squared:  0.9219, Adjusted R-squared:  0.921
## F-statistic: 998.4 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 5"
##

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## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28911 -0.07688  0.00875  0.04548  0.84999
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.346e+01  5.316e-01 -25.329 < 2e-16 ***
## elapsed_cycles_sm    1.721e-01  2.604e-02   6.610 8.60e-11 ***
## active_cycles      6.186e-01  3.085e-02  20.054 < 2e-16 ***
## device_memory_read_throughput -1.194e-02  3.195e-03  -3.739 0.000203 ***
## system_memory_write_throughput -4.001e-03  1.847e-03  -2.166 0.030704 *
## ecc_transactions    2.128e-04  3.827e-04   0.556 0.578381
## max_clock_rate    -8.260e-01  3.499e-02 -23.608 < 2e-16 ***
## theoretical_flops   -1.643e-01  2.145e-02  -7.658 7.76e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0967 on 592 degrees of freedom
## Multiple R-squared:  0.8939, Adjusted R-squared:  0.8927
## F-statistic: 712.8 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= Quadro threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28415 -0.03176  0.00271  0.04295  0.85508
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.319e+01  5.062e-01 -26.054 < 2e-16 ***
## elapsed_cycles_sm    2.001e-01  2.367e-02   8.453 < 2e-16 ***
## active_cycles      6.102e-01  2.848e-02  21.429 < 2e-16 ***
## device_memory_read_throughput -1.080e-02  2.880e-03  -3.751 0.000194 ***
## system_memory_write_throughput -2.077e-03  2.243e-03  -0.926 0.354724
## ecc_transactions   -4.069e-04  4.425e-04  -0.920 0.358128
## max_clock_rate    -9.074e-01  4.100e-02 -22.131 < 2e-16 ***
## theoretical_flops   -1.877e-01  1.933e-02  -9.712 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0868 on 592 degrees of freedom
## Multiple R-squared:  0.9386, Adjusted R-squared:  0.9379
## F-statistic: 1293 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-750 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)

```

```

##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.16528 -0.02874 -0.00580  0.04148  0.82267
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -6.5460758   0.7207770  -9.082 < 2e-16 ***
## elapsed_cycles_sm -0.0356354   0.0262574  -1.357  0.1752
## active_cycles     0.2491907   0.0368562   6.761 3.29e-11 ***
## device_memory_read_throughput -0.0146148   0.0061240  -2.386  0.0173 *
## system_memory_write_throughput -0.0018646   0.0014226  -1.311  0.1905
## ecc_transactions   0.0023733   0.0002797   8.485 < 2e-16 ***
## max_clock_rate    -0.9058531   0.0307132 -29.494 < 2e-16 ***
## theoretical_flops  -0.4183034   0.0248802 -16.813 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07554 on 592 degrees of freedom
## Multiple R-squared:  0.9495, Adjusted R-squared:  0.9489
## F-statistic: 1589 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-980 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28678 -0.03402  0.00734  0.03716  0.86962
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.367e+01  1.463e+00  -9.350 < 2e-16 ***
## elapsed_cycles_sm  1.292e-01  1.027e-01   1.259  0.20864
## active_cycles     7.292e-01  7.577e-02   9.623 < 2e-16 ***
## device_memory_read_throughput -8.456e-03  3.034e-03  -2.787  0.00548 **
## system_memory_write_throughput -3.188e-03  1.684e-03  -1.893  0.05886 .
## ecc_transactions   4.733e-04  3.017e-04   1.569  0.11722
## max_clock_rate    -8.727e-01  1.195e-01  -7.302 9.18e-13 ***
## theoretical_flops  -1.439e-01  6.754e-02  -2.131  0.03351 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0896 on 592 degrees of freedom
## Multiple R-squared:  0.925, Adjusted R-squared:  0.9241
## F-statistic: 1043 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_diagonal GPU= GTX-970 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:

```

```

##      Min      1Q   Median      3Q      Max
## -0.25383 -0.04750  0.00503  0.04169  0.17103
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -9.0023060   0.8874680 -10.144 < 2e-16 ***
## elapsed_cycles_sm -0.1439829   0.0483488  -2.978 0.003020 **
## active_cycles      0.7324165   0.0247707  29.568 < 2e-16 ***
## device_memory_read_throughput -0.0055941   0.0025504  -2.193 0.028664 *
## system_memory_write_throughput -0.0019786   0.0014179  -1.395 0.163400
## ecc_transactions    0.0008497   0.0002550   3.333 0.000913 ***
## max_clock_rate     -1.0160401   0.0413199 -24.590 < 2e-16 ***
## theoretical_flops   0.1538117   0.0470045   3.272 0.001129 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07513 on 592 degrees of freedom
## Multiple R-squared:  0.9476, Adjusted R-squared:  0.9469
## F-statistic: 1528 on 7 and 592 DF, p-value: < 2.2e-16
## [1] "kernel= lud_perimeter GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min      1Q   Median      3Q      Max
## -0.30797 -0.03450 -0.00677  0.03152  0.27294
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -19.983913   1.170584 -17.072 < 2e-16
## active_warps      0.114471   0.018302   6.254 7.69e-10
## elapsed_cycles_sm  0.724835   0.101068   7.172 2.24e-12
## issue_slots       0.029541   0.713974   0.041 0.967011
## issued_load.store_instructions -1.708013   0.102269 -16.701 < 2e-16
## multiprocessor_activity -0.364051   0.102597  -3.548 0.000419
## issue_slot_utilization  0.010489   0.124709   0.084 0.933001
## shared_load_transactions -2.085804   0.337376  -6.182 1.18e-09
## system_memory_write_throughput -0.001489   0.001949  -0.764 0.445299
## executed_load.store_instructions  3.976425   0.953937   4.168 3.53e-05
## eligible_warps_per_active_cycle -0.294080   0.070685  -4.160 3.65e-05
## max_clock_rate    -0.236336   0.202831  -1.165 0.244416
## theoretical_flops  -0.975174   0.015426 -63.214 < 2e-16
##
## (Intercept) ***
## active_warps ***
## elapsed_cycles_sm ***
## issue_slots
## issued_load.store_instructions ***
## multiprocessor_activity ***
## issue_slot_utilization
## shared_load_transactions ***
## system_memory_write_throughput

```

```

## executed_load.store_instructions ***
## eligible_warps_per_active_cycle ***
## max_clock_rate
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07264 on 587 degrees of freedom
## Multiple R-squared:  0.9861, Adjusted R-squared:  0.9858
## F-statistic: 3459 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.311314 -0.036039 -0.008996  0.036380  0.270455
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -18.763990    1.114156  -16.841 < 2e-16
## active_warps         0.148376    0.018539   8.003 6.50e-15
## elapsed_cycles_sm     0.718197    0.102315   7.019 6.17e-12
## issue_slots          2.553257    0.176004  14.507 < 2e-16
## issued_load.store_instructions -1.979994    0.065645 -30.162 < 2e-16
## multiprocessor_activity -0.356494    0.103830  -3.433 0.000638
## issue_slot_utilization  0.097184    0.128606   0.756 0.450148
## shared_load_transactions -0.878403    0.044828 -19.595 < 2e-16
## system_memory_write_throughput -0.001061    0.001969  -0.539 0.590085
## executed_load.store_instructions  0.482372    0.066210   7.286 1.04e-12
## eligible_warps_per_active_cycle -0.384239    0.076045  -5.053 5.82e-07
## max_clock_rate      -0.879416    0.103409  -8.504 < 2e-16
## theoretical_flops    -0.930013    0.011252 -82.655 < 2e-16
##
## (Intercept) ***
## active_warps ***
## elapsed_cycles_sm ***
## issue_slots ***
## issued_load.store_instructions ***
## multiprocessor_activity ***
## issue_slot_utilization ***
## shared_load_transactions ***
## system_memory_write_throughput ***
## executed_load.store_instructions ***
## eligible_warps_per_active_cycle ***
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07353 on 587 degrees of freedom
## Multiple R-squared:  0.9868, Adjusted R-squared:  0.9865

```

```

## F-statistic: 3656 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.31287 -0.03680 -0.01054  0.03705  0.27176
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.426e+01  1.930e+00 -12.572 < 2e-16
## active_warps     1.512e-01  2.203e-02   6.864 1.70e-11
## elapsed_cycles_sm 7.222e-01  1.022e-01   7.070 4.42e-12
## issue_slots      3.307e+00  2.776e-01  11.911 < 2e-16
## issued_load.store_instructions -2.082e+00  7.060e-02 -29.491 < 2e-16
## multiprocessor_activity -3.692e-01  1.045e-01  -3.533 0.000444
## issue_slot_utilization  9.436e-02  1.372e-01   0.688 0.491853
## shared_load_transactions -1.148e+00  8.599e-02 -13.347 < 2e-16
## system_memory_write_throughput -2.263e-05  4.805e-03  -0.005 0.996244
## executed_load.store_instructions 8.979e-02  1.321e-01   0.680 0.497059
## eligible_warps_per_active_cycle -3.706e-01  8.991e-02  -4.122 4.31e-05
## max_clock_rate    -1.617e-01  2.198e-01  -0.736 0.462142
## theoretical_flops  -9.730e-01  1.651e-02 -58.933 < 2e-16
##
## (Intercept)      ***
## active_warps      ***
## elapsed_cycles_sm  ***
## issue_slots        ***
## issued_load.store_instructions ***
## multiprocessor_activity ***
## issue_slot_utilization
## shared_load_transactions ***
## system_memory_write_throughput
## executed_load.store_instructions
## eligible_warps_per_active_cycle ***
## max_clock_rate
## theoretical_flops  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07339 on 587 degrees of freedom
## Multiple R-squared:  0.9859, Adjusted R-squared:  0.9856
## F-statistic: 3412 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

```

## -0.306633 -0.027501 -0.005681 0.020258 0.272072
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.383e+01  1.193e+00 -11.593 < 2e-16
## active_warps     1.189e-01  1.400e-02   8.489 < 2e-16
## elapsed_cycles_sm 7.270e-01  7.750e-02   9.381 < 2e-16
## issue_slots      1.866e+00  1.830e-01  10.194 < 2e-16
## issued_load.store_instructions -1.972e+00  4.968e-02 -39.698 < 2e-16
## multiprocessor_activity -3.478e-01  7.911e-02  -4.396 1.31e-05
## issue_slot_utilization 2.077e-03  9.656e-02   0.022 0.983
## shared_load_transactions -6.341e-01  5.565e-02 -11.396 < 2e-16
## system_memory_write_throughput -3.897e-04  1.501e-03  -0.260 0.795
## executed_load.store_instructions 9.454e-01  9.351e-02  10.110 < 2e-16
## eligible_warps_per_active_cycle -2.846e-01  5.576e-02  -5.104 4.50e-07
## max_clock_rate   -1.470e+00  1.370e-01 -10.726 < 2e-16
## theoretical_flops -8.971e-01  1.134e-02 -79.128 < 2e-16
##
## (Intercept)      ***
## active_warps      ***
## elapsed_cycles_sm ***
## issue_slots        ***
## issued_load.store_instructions ***
## multiprocessor_activity ***
## issue_slot_utilization
## shared_load_transactions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## eligible_warps_per_active_cycle ***
## max_clock_rate     ***
## theoretical_flops   ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05569 on 587 degrees of freedom
## Multiple R-squared:  0.9923, Adjusted R-squared:  0.9921
## F-statistic: 6306 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-750 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.236953 -0.031440 -0.007449  0.030037  0.260770
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -17.895851  1.081474 -16.548 < 2e-16
## active_warps     0.111557  0.017072   6.534 1.39e-10
## elapsed_cycles_sm 0.682056  0.102893   6.629 7.68e-11
## issue_slots      3.092292  0.206299  14.989 < 2e-16
## issued_load.store_instructions -2.426604  0.128441 -18.893 < 2e-16

```



```

## multiprocessor_activity      -0.386643    0.103900   -3.721 0.000217
## issue_slot_utilization      -0.066564    0.129083   -0.516 0.606282
## shared_load_transactions    -0.925256    0.041863  -22.102 < 2e-16
## system_memory_write_throughput -0.000777    0.001763   -0.441 0.659622
## executed_load.store_instructions 0.500133    0.060453    8.273 8.79e-16
## eligible_warps_per_active_cycle -0.252549    0.078280   -3.226 0.001324
## max_clock_rate              -0.933476    0.098389   -9.488 < 2e-16
## theoretical_flops           -1.129515    0.051295  -22.020 < 2e-16
##
## (Intercept)                  ***
## active_warps                  ***
## elapsed_cycles_sm             ***
## issue_slots                   ***
## issued_load.store_instructions ***
## multiprocessor_activity       ***
## issue_slot_utilization        ***
## shared_load_transactions      ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## eligible_warps_per_active_cycle **
## max_clock_rate                ***
## theoretical_flops             ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06749 on 587 degrees of freedom
## Multiple R-squared:  0.9861, Adjusted R-squared:  0.9858
## F-statistic: 3459 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-980 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.292861 -0.032361 -0.006178  0.024246  0.197910
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -18.671929    1.303407  -14.325 < 2e-16
## active_warps     0.155641    0.019602   7.940 1.03e-14
## elapsed_cycles_sm 0.817133    0.127907   6.388 3.41e-10
## issue_slots      4.198061    0.713161   5.887 6.64e-09
## issued_load.store_instructions -3.276677    0.544171  -6.021 3.05e-09
## multiprocessor_activity -0.253306    0.129540  -1.955 0.05101
## issue_slot_utilization -0.002346    0.147335  -0.016 0.98730
## shared_load_transactions -1.445994    0.221445  -6.530 1.43e-10
## system_memory_write_throughput -0.001005    0.001744  -0.576 0.56478
## executed_load.store_instructions 0.597056    0.089430   6.676 5.69e-11
## eligible_warps_per_active_cycle -0.209025    0.072121  -2.898 0.00389
## max_clock_rate   -1.111451    0.180344  -6.163 1.33e-09
## theoretical_flops -1.072841    0.056253 -19.072 < 2e-16
##

```

```

## (Intercept) ***
## active_warps ***
## elapsed_cycles_sm ***
## issue_slots ***
## issued_load.store_instructions ***
## multiprocessor_activity .
## issue_slot_utilization
## shared_load_transactions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## eligible_warps_per_active_cycle **
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06675 on 587 degrees of freedom
## Multiple R-squared:  0.9851, Adjusted R-squared:  0.9848
## F-statistic: 3240 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.308933 -0.026320 -0.006949  0.020983  0.278027
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -19.882228    1.297610  -15.322  < 2e-16
## active_warps      0.126903    0.018989   6.683 5.45e-11
## elapsed_cycles_sm  0.697904    0.119745   5.828 9.24e-09
## issue_slots       1.115325    0.645033   1.729 0.084317
## issued_load.store_instructions -0.636491    0.555807  -1.145 0.252608
## multiprocessor_activity -0.370596    0.120612  -3.073 0.002220
## issue_slot_utilization -0.147584    0.137914  -1.070 0.285006
## shared_load_transactions -0.547338    0.151904  -3.603 0.000341
## system_memory_write_throughput -0.001133    0.001795  -0.631 0.528344
## executed_load.store_instructions  0.287738    0.097382   2.955 0.003255
## eligible_warps_per_active_cycle -0.177472    0.066498  -2.669 0.007822
## max_clock_rate    -0.464603    0.166336  -2.793 0.005390
## theoretical_flops  -0.960044    0.013141 -73.059  < 2e-16
##
## (Intercept) ***
## active_warps ***
## elapsed_cycles_sm ***
## issue_slots .
## issued_load.store_instructions
## multiprocessor_activity **
## issue_slot_utilization
## shared_load_transactions ***
## system_memory_write_throughput

```

```

## executed_load.store_instructions **
## eligible_warps_per_active_cycle **
## max_clock_rate **
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06879 on 587 degrees of freedom
## Multiple R-squared:  0.9868, Adjusted R-squared:  0.9865
## F-statistic: 3645 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.31980 -0.07177 -0.00745  0.07305  0.33464
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -16.369988   0.534145  -30.647 < 2e-16 ***
## active_warps      0.199931   0.024939   8.017 5.82e-15 ***
## elapsed_cycles_sm  0.742188   0.037233  19.934 < 2e-16 ***
## multiprocessor_activity -0.242223   0.038266  -6.330 4.84e-10 ***
## issue_slot_utilization -0.143868   0.027823  -5.171 3.19e-07 ***
## system_memory_write_throughput -0.003358   0.003197  -1.050  0.294
## max_clock_rate    -0.799117   0.035769 -22.341 < 2e-16 ***
## theoretical_flops   -0.755500   0.012777 -59.128 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1196 on 592 degrees of freedom
## Multiple R-squared:  0.9619, Adjusted R-squared:  0.9614
## F-statistic: 2134 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.45612 -0.10673 -0.01917  0.14474  0.34547
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -20.480691   0.590415  -34.689 <2e-16 ***
## active_warps      0.031254   0.029458   1.061  0.2891
## elapsed_cycles_sm  1.004845   0.042392  23.703 <2e-16 ***
## multiprocessor_activity 0.016433   0.047114   0.349  0.7274
## issue_slot_utilization 0.001690   0.033943   0.050  0.9603
## system_memory_write_throughput -0.008978   0.004116  -2.181  0.0296 *

```

```

## max_clock_rate          -0.551586    0.042499 -12.979    <2e-16 ***
## theoretical_flops       -0.812269    0.015632 -51.963    <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.155 on 592 degrees of freedom
## Multiple R-squared:  0.9408, Adjusted R-squared:  0.9401
## F-statistic: 1344 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.43464 -0.10418 -0.01801  0.11199  0.44903
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -20.15664     0.63343  -31.821   < 2e-16 ***
## active_warps      0.05018     0.03019   1.662   0.0969 .
## elapsed_cycles_sm  0.93757     0.04392  21.345   < 2e-16 ***
## multiprocessor_activity  0.03617     0.05511   0.656   0.5119
## issue_slot_utilization -0.02658     0.03556  -0.747   0.4551
## system_memory_write_throughput -0.05779     0.00942  -6.134 1.56e-09 ***
## max_clock_rate    -0.50475     0.04684 -10.777   < 2e-16 ***
## theoretical_flops  -0.77610     0.01696 -45.764   < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1518 on 592 degrees of freedom
## Multiple R-squared:  0.939, Adjusted R-squared:  0.9383
## F-statistic: 1303 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.45368 -0.06482 -0.02583  0.11707  0.36821
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -21.282406     0.579168  -36.747   <2e-16 ***
## active_warps    0.024506     0.028284   0.866   0.3866
## elapsed_cycles_sm 1.019449     0.040818  24.975   <2e-16 ***
## multiprocessor_activity  0.077590     0.051893   1.495   0.1354
## issue_slot_utilization  0.010273     0.032491   0.316   0.7520
## system_memory_write_throughput -0.009120     0.003948  -2.310   0.0212 *
## max_clock_rate   -0.493255     0.040090 -12.304   <2e-16 ***
## theoretical_flops -0.820036     0.014982 -54.736   <2e-16 ***

```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.148 on 592 degrees of freedom
## Multiple R-squared:  0.9452, Adjusted R-squared:  0.9445
## F-statistic: 1458 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.45557 -0.08707 -0.01080  0.12881  0.30730
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -19.959751   0.634403  -31.462 < 2e-16 ***
## active_warps      0.088287   0.032159   2.745  0.00623 **
## elapsed_cycles_sm  0.888672   0.048990  18.140 < 2e-16 ***
## multiprocessor_activity -0.068289   0.048975  -1.394  0.16373
## issue_slot_utilization -0.045696   0.034143  -1.338  0.18129
## system_memory_write_throughput -0.008197   0.003907  -2.098  0.03629 *
## max_clock_rate    -0.463915   0.041187 -11.264 < 2e-16 ***
## theoretical_flops  -0.942545   0.029952 -31.468 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1507 on 592 degrees of freedom
## Multiple R-squared:  0.9299, Adjusted R-squared:  0.929
## F-statistic: 1121 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.34834 -0.05333 -0.00170  0.04984  0.24594
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -2.454e+01  3.469e-01 -70.742 <2e-16 ***
## active_warps    -3.162e-04  1.916e-02  -0.017  0.9868
## elapsed_cycles_sm  1.092e+00  2.527e-02  43.230 <2e-16 ***
## multiprocessor_activity  2.543e-02  2.748e-02   0.926  0.3550
## issue_slot_utilization -1.507e-02  2.091e-02  -0.720  0.4716
## system_memory_write_throughput -4.271e-03  2.188e-03  -1.952  0.0514 .
## max_clock_rate    -4.544e-02  2.613e-02  -1.739  0.0825 .
## theoretical_flops  -7.521e-01  8.764e-03 -85.811 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

```
##
## Residual standard error: 0.08448 on 592 degrees of freedom
## Multiple R-squared:  0.976, Adjusted R-squared:  0.9757
## F-statistic: 3435 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.44383 -0.08035 -0.02420  0.04742  0.37065
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -22.671525   0.537408  -42.187 < 2e-16 ***
## active_warps     -0.106739   0.031439   -3.395 0.000732 ***
## elapsed_cycles_sm  1.221119   0.042271  28.888 < 2e-16 ***
## multiprocessor_activity  0.176802   0.044794   3.947 8.86e-05 ***
## issue_slot_utilization  0.102670   0.033678   3.049 0.002402 **
## system_memory_write_throughput -0.008544   0.003476  -2.458 0.014246 *
## max_clock_rate    -0.507443   0.036352 -13.959 < 2e-16 ***
## theoretical_flops  -0.969984   0.017424 -55.668 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1345 on 592 degrees of freedom
## Multiple R-squared:  0.949, Adjusted R-squared:  0.9484
## F-statistic: 1573 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-680 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.290313 -0.032194 -0.002105  0.029261  0.251217
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -4.417e+04  1.073e+04  -4.116 4.41e-05
## elapsed_cycles_sm  1.034e+00  2.196e-02  47.069 < 2e-16
## integer_instructions  1.642e+04  3.991e+03   4.115 4.43e-05
## inst_issued2    -1.303e+01  4.808e+00  -2.711 0.006902
## active_cycles    -1.796e-02  2.228e-02  -0.806 0.420681
## active_warps     6.117e-02  1.713e-02   3.570 0.000386
## device_memory_read_transactions -5.438e-02  2.067e-02  -2.632 0.008721
## system_memory_write_throughput -9.700e-04  1.949e-03  -0.498 0.618840
## executed_load.store_instructions -1.185e+04  2.880e+03  -4.113 4.46e-05
## issued_load.store_instructions -3.190e+00  2.835e+00  -1.125 0.260985
## control_flow_instructions -4.559e+03  1.107e+03  -4.118 4.37e-05
## max_clock_rate    2.433e-01  2.263e-01   1.075 0.282695
```

```

## theoretical_flops          -1.003e+00  1.780e-02 -56.331  < 2e-16
##
## (Intercept)                ***
## elapsed_cycles_sm          ***
## integer_instructions        ***
## inst_issued2               **
## active_cycles
## active_warps                ***
## device_memory_read_transactions **
## system_memory_write_throughput
## executed_load.store_instructions ***
## issued_load.store_instructions
## control.flow_instructions   ***
## max_clock_rate
## theoretical_flops          ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07254 on 587 degrees of freedom
## Multiple R-squared:  0.9861, Adjusted R-squared:  0.9858
## F-statistic: 3469 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.293731 -0.032819 -0.004108  0.037643  0.288240
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -26.671609    3.891951  -6.853 1.83e-11
## elapsed_cycles_sm    1.008719    0.023489  42.944 < 2e-16
## integer_instructions    3.710905    2.322726   1.598 0.110659
## inst_issued2    2.183300    1.569150   1.391 0.164634
## active_cycles    0.005109    0.023826   0.214 0.830283
## active_warps    0.086565    0.016105   5.375 1.11e-07
## device_memory_read_transactions -0.087242    0.022204  -3.929 9.54e-05
## system_memory_write_throughput -0.001334    0.002000  -0.667 0.505160
## executed_load.store_instructions  0.347450    0.089155   3.897 0.000109
## issued_load.store_instructions -2.289904    1.626793  -1.408 0.159773
## control.flow_instructions -3.933748    2.259829  -1.741 0.082255
## max_clock_rate    -0.533808    0.147497  -3.619 0.000321
## theoretical_flops    -0.950142    0.013774 -68.980 < 2e-16
##
## (Intercept)                ***
## elapsed_cycles_sm          ***
## integer_instructions        ***
## inst_issued2               **
## active_cycles
## active_warps                ***
## device_memory_read_transactions ***

```

```

## system_memory_write_throughput
## executed_load.store_instructions ***
## issued_load.store_instructions
## control.flow_instructions .
## max_clock_rate ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07465 on 587 degrees of freedom
## Multiple R-squared:  0.9864, Adjusted R-squared:  0.9861
## F-statistic: 3546 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.28066 -0.03037 -0.00508  0.03189  0.36925
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -19.317371     4.867794  -3.968 8.13e-05
## elapsed_cycles_sm      0.993448     0.026683  37.232 < 2e-16
## integer_instructions    2.432997     2.433662   1.000  0.318
## inst_issued2      1.406320     1.634338   0.860  0.390
## active_cycles      0.014661     0.027107   0.541  0.589
## active_warps      0.086261     0.016594   5.198 2.78e-07
## device_memory_read_transactions -0.154733     0.029540  -5.238 2.26e-07
## system_memory_write_throughput -0.003524     0.004796  -0.735  0.463
## executed_load.store_instructions  0.776615     0.183239   4.238 2.62e-05
## issued_load.store_instructions -2.008430     1.668425  -1.204  0.229
## control.flow_instructions    -2.520946     2.376408  -1.061  0.289
## max_clock_rate    -1.317088     0.323431  -4.072 5.30e-05
## theoretical_flops    -0.897958     0.022515 -39.884 < 2e-16
##
## (Intercept)          ***
## elapsed_cycles_sm      ***
## integer_instructions
## inst_issued2
## active_cycles
## active_warps          ***
## device_memory_read_transactions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## issued_load.store_instructions
## control.flow_instructions
## max_clock_rate          ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```



```

## Residual standard error: 0.07354 on 587 degrees of freedom
## Multiple R-squared:  0.9858, Adjusted R-squared:  0.9855
## F-statistic: 3397 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Quadro threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.283524 -0.024367 -0.003521  0.019079  0.239907
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -28.178429   3.150606  -8.944 < 2e-16
## elapsed_cycles_sm      0.999112   0.020551  48.616 < 2e-16
## integer_instructions    3.827355   1.796855   2.130  0.0336
## inst_issued2      2.203369   1.215378   1.813  0.0704
## active_cycles      0.018026   0.020914   0.862  0.3891
## active_warps      0.070359   0.012203   5.766 1.32e-08
## device_memory_read_transactions -0.101157   0.020017  -5.054 5.80e-07
## system_memory_write_throughput -0.000366   0.001507  -0.243  0.8082
## executed_load.store_instructions  0.226326   0.127838   1.770  0.0772
## issued_load.store_instructions -2.175692   1.276411  -1.705  0.0888
## control.flow.instructions  -4.026506   1.745823  -2.306  0.0214
## max_clock_rate    -0.370126   0.187655  -1.972  0.0490
## theoretical_flops  -0.964146   0.014335 -67.256 < 2e-16
##
## (Intercept)          ***
## elapsed_cycles_sm      ***
## integer_instructions    *
## inst_issued2          .
## active_cycles
## active_warps          ***
## device_memory_read_transactions ***
## system_memory_write_throughput
## executed_load.store_instructions .
## issued_load.store_instructions .
## control.flow.instructions  *
## max_clock_rate        *
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05592 on 587 degrees of freedom
## Multiple R-squared:  0.9922, Adjusted R-squared:  0.9921
## F-statistic: 6254 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-750 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##

```

```

## Residuals:
##      Min        1Q      Median        3Q        Max
## -0.239573 -0.027673 -0.003953  0.025561  0.260697
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -24.905477   3.504345  -7.107 3.45e-12
## elapsed_cycles_sm      1.007246   0.020413  49.343 < 2e-16
## integer_instructions    2.734405   2.065871   1.324 0.186148
## inst_issued2      1.567155   1.387551   1.129 0.259174
## active_cycles    -0.013701   0.020637  -0.664 0.507025
## active_warps      0.075606   0.015362   4.922 1.12e-06
## device_memory_read_transactions -0.067073   0.020245  -3.313 0.000980
## system_memory_write_throughput -0.001125   0.001776  -0.633 0.526713
## executed_load.store_instructions  0.342976   0.084017   4.082 5.08e-05
## issued_load.store_instructions -1.598655   1.442644  -1.108 0.268254
## control.flow.instructions  -3.034451   2.004086  -1.514 0.130531
## max_clock_rate    -0.515180   0.135243  -3.809 0.000154
## theoretical_flops  -0.917457   0.051079 -17.962 < 2e-16
##
## (Intercept)          ***
## elapsed_cycles_sm      ***
## integer_instructions
## inst_issued2
## active_cycles
## active_warps          ***
## device_memory_read_transactions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## issued_load.store_instructions
## control.flow.instructions
## max_clock_rate          ***
## theoretical_flops       ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06797 on 587 degrees of freedom
## Multiple R-squared:  0.9859, Adjusted R-squared:  0.9856
## F-statistic: 3410 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-980 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min        1Q      Median        3Q        Max
## -0.276836 -0.023110 -0.001987  0.017342  0.266716
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -27.252614   3.464940  -7.865 1.78e-14
## elapsed_cycles_sm      1.013427   0.019647  51.581 < 2e-16
## integer_instructions    3.694666   2.037125   1.814 0.070240

```

```

## inst_issued2          2.324025    1.353370    1.717 0.086468
## active_cycles        0.019568    0.020007    0.978 0.328444
## active_warps         0.113667    0.017559    6.473 2.03e-10
## device_memory_read_transactions -0.076625    0.020343   -3.767 0.000182
## system_memory_write_throughput -0.001248    0.001731   -0.721 0.471235
## executed_load.store_instructions 0.298415    0.082320    3.625 0.000314
## issued_load.store_instructions -2.417084    1.398418   -1.728 0.084435
## control_flow_instructions -3.932247    1.992012   -1.974 0.048849
## max_clock_rate       -0.447840    0.132472   -3.381 0.000771
## theoretical_flops     -0.904317    0.050257  -17.994 < 2e-16
##
## (Intercept)          ***
## elapsed_cycles_sm    ***
## integer_instructions .
## inst_issued2         .
## active_cycles
## active_warps         ***
## device_memory_read_transactions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## issued_load.store_instructions .
## control_flow_instructions *
## max_clock_rate       ***
## theoretical_flops     ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06625 on 587 degrees of freedom
## Multiple R-squared:  0.9853, Adjusted R-squared:  0.985
## F-statistic: 3289 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-970 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.284889 -0.026863 -0.001091  0.020513  0.259943
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -1.333e+02  2.949e+01  -4.519 7.52e-06
## elapsed_cycles_sm  1.032e+00  2.040e-02  50.586 < 2e-16
## integer_instructions  4.691e+01  1.210e+01   3.876 0.000118
## inst_issued2    -1.052e+01  3.877e+00  -2.713 0.006865
## active_cycles   -6.027e-03  2.051e-02  -0.294 0.769022
## active_warps     8.831e-02  1.788e-02   4.939 1.02e-06
## device_memory_read_transactions -4.348e-02  1.948e-02  -2.232 0.026005
## system_memory_write_throughput -7.492e-04  1.783e-03  -0.420 0.674415
## executed_load.store_instructions -1.709e-02  1.137e-01  -0.150 0.880641
## issued_load.store_instructions -9.570e-01  1.496e+00  -0.640 0.522536
## control_flow_instructions -3.545e+01  8.881e+00  -3.991 7.41e-05
## max_clock_rate     9.387e-02  1.930e-01   0.486 0.626873

```

```

## theoretical_flops          -9.923e-01  1.552e-02 -63.935  < 2e-16
##
## (Intercept)                ***
## elapsed_cycles_sm          ***
## integer_instructions        ***
## inst_issued2                **
## active_cycles
## active_warps                ***
## device_memory_read_transactions *
## system_memory_write_throughput
## executed_load.store_instructions
## issued_load.store_instructions
## control_flow_instructions    ***
## max_clock_rate
## theoretical_flops            ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06824 on 587 degrees of freedom
## Multiple R-squared:  0.987, Adjusted R-squared:  0.9867
## F-statistic: 3704 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-680 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.31897 -0.05696 -0.01366  0.03315  0.38685
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -8.7766133   0.5978102  -14.681  < 2e-16
## elapsed_cycles_sm    0.9764866   0.0165284   59.079  < 2e-16
## active_warps        0.1123414   0.0213587    5.260 2.02e-07
## issued_load.store_instructions -1.1799789   0.0632646  -18.652  < 2e-16
## system_memory_write_throughput  0.0001155   0.0025703    0.045  0.964
## executed_load.store_instructions  1.0950527   0.0710688   15.408  < 2e-16
## max_clock_rate    -2.1802829   0.0818845  -26.626  < 2e-16
## theoretical_flops   -0.7884986   0.0101598  -77.610  < 2e-16
##
## (Intercept)                ***
## elapsed_cycles_sm          ***
## active_warps                ***
## issued_load.store_instructions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## max_clock_rate              ***
## theoretical_flops            ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09589 on 592 degrees of freedom

```

```

## Multiple R-squared:  0.9755, Adjusted R-squared:  0.9752
## F-statistic:  3367 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.36046 -0.06844 -0.00980  0.05821  0.43187
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -6.811e+00  6.088e-01 -11.188  <2e-16
## elapsed_cycles_sm    1.023e+00  1.632e-02  62.683  <2e-16
## active_warps    -3.269e-02  1.515e-02  -2.158  0.0314
## issued_load.store_instructions -1.467e+00  6.069e-02 -24.175  <2e-16
## system_memory_write_throughput  3.074e-05  2.781e-03   0.011  0.9912
## executed_load.store_instructions  1.535e+00  5.788e-02  26.525  <2e-16
## max_clock_rate    -2.474e+00  8.256e-02 -29.972  <2e-16
## theoretical_flops    -8.230e-01  9.902e-03 -83.106  <2e-16
##
## (Intercept)          ***
## elapsed_cycles_sm    ***
## active_warps          *
## issued_load.store_instructions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## max_clock_rate        ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.104 on 592 degrees of freedom
## Multiple R-squared:  0.9734, Adjusted R-squared:  0.9731
## F-statistic:  3093 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.34587 -0.05658 -0.01869  0.04810  0.34177
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -3.146941   0.580835  -5.418 8.78e-08 ***
## elapsed_cycles_sm    1.034304   0.015393  67.193  < 2e-16 ***
## active_warps     0.002152   0.013287   0.162  0.8714
## issued_load.store_instructions -1.769964   0.056137 -31.529  < 2e-16 ***
## system_memory_write_throughput -0.011359   0.005676  -2.001  0.0458 *

```

```

## executed_load.store_instructions 1.787585 0.052724 33.904 < 2e-16 ***
## max_clock_rate -3.006260 0.082505 -36.437 < 2e-16 ***
## theoretical_flops -0.819806 0.009486 -86.423 < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08826 on 592 degrees of freedom
## Multiple R-squared: 0.9794, Adjusted R-squared: 0.9791
## F-statistic: 4018 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= Quadro threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.32596 -0.04487 -0.00277  0.04942  0.22974
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -3.7764635   0.4311467   -8.759 <2e-16
## elapsed_cycles_sm    1.0382200   0.0111172   93.389 <2e-16
## active_warps    -0.0154241   0.0100701   -1.532  0.126
## issued_load.store_instructions -1.9253481   0.0454017  -42.407 <2e-16
## system_memory_write_throughput  0.0007432   0.0018441    0.403  0.687
## executed_load.store_instructions 1.9741652   0.0430084   45.902 <2e-16
## max_clock_rate    -2.9363874   0.0592363  -49.571 <2e-16
## theoretical_flops    -0.8203310   0.0065523 -125.197 <2e-16
##
## (Intercept)          ***
## elapsed_cycles_sm      ***
## active_warps
## issued_load.store_instructions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## max_clock_rate        ***
## theoretical_flops      ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.06865 on 592 degrees of freedom
## Multiple R-squared: 0.9882, Adjusted R-squared: 0.9881
## F-statistic: 7085 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-750 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.31962 -0.06606 -0.00348  0.02937  0.40868
##

```

```
## Coefficients:
##
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -6.1568622   0.5785552 -10.642  <2e-16
## elapsed_cycles_sm    0.9756643   0.0177489  54.970  <2e-16
## active_warps        0.0235324   0.0199256   1.181    0.238
## issued_load.store_instructions -1.5429658   0.0565944 -27.264  <2e-16
## system_memory_write_throughput  0.0004952   0.0025145   0.197    0.844
## executed_load.store_instructions  1.5526655   0.0528718  29.367  <2e-16
## max_clock_rate     -2.5068637   0.0766067 -32.724  <2e-16
## theoretical_flops   -0.9198858   0.0223253 -41.204  <2e-16
##
## (Intercept)          ***
## elapsed_cycles_sm    ***
## active_warps
## issued_load.store_instructions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## max_clock_rate       ***
## theoretical_flops     ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09636 on 592 degrees of freedom
## Multiple R-squared:  0.9713, Adjusted R-squared:  0.971
## F-statistic: 2866 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-980 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.37625 -0.04348 -0.01078  0.04081  0.25987
##
## Coefficients:
##
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -19.869086   0.872875 -22.763  < 2e-16
## elapsed_cycles_sm    1.084475   0.012264  88.426  < 2e-16
## active_warps       -0.075521   0.012999  -5.810 1.02e-08
## issued_load.store_instructions -0.387044   0.077405  -5.000 7.55e-07
## system_memory_write_throughput -0.002007   0.002082  -0.964   0.335
## executed_load.store_instructions  0.469745   0.075719   6.204 1.04e-09
## max_clock_rate     -0.657254   0.120891  -5.437 7.94e-08
## theoretical_flops   -0.777997   0.008033 -96.848  < 2e-16
##
## (Intercept)          ***
## elapsed_cycles_sm    ***
## active_warps         ***
## issued_load.store_instructions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## max_clock_rate       ***
## theoretical_flops     ***
```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07978 on 592 degrees of freedom
## Multiple R-squared:  0.9786, Adjusted R-squared:  0.9783
## F-statistic: 3863 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_perimeter GPU= GTX-970 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.40134 -0.04644 -0.01047  0.04066  0.38351
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -9.7504552   0.8022100  -12.154 < 2e-16
## elapsed_cycles_sm    1.0583259   0.0157120   67.358 < 2e-16
## active_warps    -0.1216432   0.0208053  -5.847 8.29e-09
## issued_load.store_instructions -1.1499985   0.0846149  -13.591 < 2e-16
## system_memory_write_throughput -0.0006922   0.0025425   -0.272  0.786
## executed_load.store_instructions  1.2981034   0.0731793   17.739 < 2e-16
## max_clock_rate    -2.0733026   0.1086127  -19.089 < 2e-16
## theoretical_flops    -0.8899756   0.0150005  -59.330 < 2e-16
##
## (Intercept)          ***
## elapsed_cycles_sm      ***
## active_warps           ***
## issued_load.store_instructions ***
## system_memory_write_throughput
## executed_load.store_instructions ***
## max_clock_rate         ***
## theoretical_flops      ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09747 on 592 degrees of freedom
## Multiple R-squared:  0.9732, Adjusted R-squared:  0.9729
## F-statistic: 3069 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.34714 -0.04494 -0.01364  0.02382  0.65132
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -7.292898   0.653835  -11.154

```



```

## floating_point_operations.single_precision.  5.544563  0.778033  7.126
## misc_instructions                          -5.384529  1.067423 -5.044
## multiprocessor_activity                   -0.992806  0.029078 -34.143
## achieved_occupancy                       -0.239743  0.035238 -6.804
## global_load_transactions                  NA        NA      NA
## global_store_transactions                 NA        NA      NA
## device_memory_read_transactions          -0.014884  0.007602 -1.958
## system_memory_write_throughput           -0.003571  0.001843 -1.938
## issued_control.flow_instructions          0.875376  0.292127  2.997
## executed_control.flow_instructions        NA        NA      NA
## max_clock_rate                           -2.661428  0.092797 -28.680
## theoretical_flops                        -0.760506  0.006830 -111.349
##                                           Pr(>|t|)
## (Intercept)                             < 2e-16 ***
## floating_point_operations.single_precision. 3.02e-12 ***
## misc_instructions                       6.06e-07 ***
## multiprocessor_activity                 < 2e-16 ***
## achieved_occupancy                     2.51e-11 ***
## global_load_transactions                NA
## global_store_transactions               NA
## device_memory_read_transactions         0.05070 .
## system_memory_write_throughput          0.05315 .
## issued_control.flow_instructions        0.00285 **
## executed_control.flow_instructions       NA
## max_clock_rate                         < 2e-16 ***
## theoretical_flops                      < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08913 on 590 degrees of freedom
## Multiple R-squared:  0.9981, Adjusted R-squared:  0.9981
## F-statistic: 3.408e+04 on 9 and 590 DF,  p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= lud_internal  GPU= Tesla-K40  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.47209 -0.09771  0.00454  0.09342  0.63159
##
## Coefficients: (3 not defined because of singularities)
##
##              Estimate Std. Error t value
## (Intercept)   -2.213e+01  5.414e-01 -40.876
## floating_point_operations.single_precision. -6.734e+00  9.083e-01 -7.414
## misc_instructions  1.051e+01  1.294e+00  8.118
## multiprocessor_activity -7.630e-01  4.967e-02 -15.362
## achieved_occupancy -5.446e-01  5.137e-02 -10.602
## global_load_transactions NA        NA      NA
## global_store_transactions NA        NA      NA
## device_memory_read_transactions  4.338e-04  1.109e-02  0.039

```

```

## system_memory_write_throughput      -8.467e-03  3.580e-03  -2.365
## issued_control.flow.instructions     -2.770e+00  3.844e-01  -7.207
## executed_control.flow.instructions    NA          NA      NA
## max_clock_rate                       -4.028e-01  4.229e-02  -9.525
## theoretical_flops                     -7.783e-01  1.004e-02 -77.492
##                                     Pr(>|t|)
## (Intercept)                          < 2e-16 ***
## floating_point_operations.single_precision. 4.28e-13 ***
## misc_instructions                     2.78e-15 ***
## multiprocessor_activity               < 2e-16 ***
## achieved_occupancy                   < 2e-16 ***
## global_load_transactions              NA
## global_store_transactions             NA
## device_memory_read_transactions       0.9688
## system_memory_write_throughput        0.0183 *
## issued_control.flow.instructions      1.76e-12 ***
## executed_control.flow.instructions    NA
## max_clock_rate                       < 2e-16 ***
## theoretical_flops                     < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.129 on 590 degrees of freedom
## Multiple R-squared:  0.996, Adjusted R-squared:  0.9959
## F-statistic: 1.631e+04 on 9 and 590 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= lud_internal GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.53754 -0.08579  0.00165  0.09228  0.41308
##
## Coefficients: (3 not defined because of singularities)
##                                     Estimate Std. Error t value
## (Intercept)                       -23.267296   0.473138 -49.177
## floating_point_operations.single_precision. -12.226387   1.287763 -9.494
## misc_instructions                   18.352835   1.838034  9.985
## multiprocessor_activity             -0.855081   0.041595 -20.557
## achieved_occupancy                 -0.574213   0.053574 -10.718
## global_load_transactions            NA          NA      NA
## global_store_transactions           NA          NA      NA
## device_memory_read_transactions      0.003049   0.010700  0.285
## system_memory_write_throughput      -0.004041   0.002655 -1.522
## issued_control.flow.instructions     -5.123229   0.550729 -9.303
## executed_control.flow.instructions    NA          NA      NA
## max_clock_rate                     -0.619975   0.066169 -9.370
## theoretical_flops                   -0.787937   0.009738 -80.914
##                                     Pr(>|t|)
## (Intercept)                        <2e-16 ***

```

```

## floating_point_operations.single_precision. <2e-16 ***
## misc_instructions <2e-16 ***
## multiprocessor_activity <2e-16 ***
## achieved_occupancy <2e-16 ***
## global_load_transactions NA
## global_store_transactions NA
## device_memory_read_transactions 0.776
## system_memory_write_throughput 0.128
## issued_control.flow_instructions <2e-16 ***
## executed_control.flow_instructions NA
## max_clock_rate <2e-16 ***
## theoretical_flops <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1279 on 590 degrees of freedom
## Multiple R-squared:  0.996, Adjusted R-squared:  0.9959
## F-statistic: 1.634e+04 on 9 and 590 DF, p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= lud_internal GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.48946 -0.03334 -0.00447  0.07108  0.37611
##
## Coefficients: (3 not defined because of singularities)
##
##              Estimate Std. Error t value
## (Intercept)    -22.098836    0.454731  -48.598
## floating_point_operations.single_precision.    -7.240264    0.836609   -8.654
## misc_instructions    11.222451    1.189959    9.431
## multiprocessor_activity    -0.882186    0.037907  -23.273
## achieved_occupancy    -0.476196    0.044777  -10.635
## global_load_transactions      NA         NA      NA
## global_store_transactions      NA         NA      NA
## device_memory_read_transactions    0.004265    0.010746    0.397
## system_memory_write_throughput   -0.004052    0.003365   -1.204
## issued_control.flow_instructions   -2.975494    0.354633   -8.390
## executed_control.flow_instructions      NA         NA      NA
## max_clock_rate    -0.380143    0.039126   -9.716
## theoretical_flops   -0.785402    0.009324  -84.238
##
##              Pr(>|t|)
## (Intercept)    < 2e-16 ***
## floating_point_operations.single_precision.    < 2e-16 ***
## misc_instructions    < 2e-16 ***
## multiprocessor_activity    < 2e-16 ***
## achieved_occupancy    < 2e-16 ***
## global_load_transactions      NA
## global_store_transactions      NA
## device_memory_read_transactions    0.692

```

```

## system_memory_write_throughput          0.229
## issued_control.flow.instructions        3.59e-16 ***
## executed_control.flow.instructions      NA
## max_clock_rate                         < 2e-16 ***
## theoretical_flops                      < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1207 on 590 degrees of freedom
## Multiple R-squared:  0.9965, Adjusted R-squared:  0.9964
## F-statistic: 1.862e+04 on 9 and 590 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= lud_internal  GPU= GTX-750  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.40541 -0.08166 -0.00116  0.05413  0.43513
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -23.307087   0.353607  -65.912
## floating_point_operations.single_precision. -12.641135   0.721230  -17.527
## misc_instructions      18.166734   1.006975   18.041
## multiprocessor_activity  -0.938239   0.033726  -27.820
## achieved_occupancy     -0.462274   0.038756  -11.928
## global_load_transactions      NA         NA      NA
## global_store_transactions      NA         NA      NA
## device_memory_read_transactions  -0.019620   0.008907   -2.203
## system_memory_write_throughput  -0.002657   0.002173   -1.223
## issued_control.flow.instructions  -4.491084   0.287128  -15.641
## executed_control.flow.instructions      NA         NA      NA
## max_clock_rate      -0.004878   0.041084   -0.119
## theoretical_flops      0.017203   0.049270   0.349
##              Pr(>|t|)
## (Intercept)      <2e-16 ***
## floating_point_operations.single_precision. <2e-16 ***
## misc_instructions <2e-16 ***
## multiprocessor_activity <2e-16 ***
## achieved_occupancy <2e-16 ***
## global_load_transactions      NA
## global_store_transactions      NA
## device_memory_read_transactions  0.028 *
## system_memory_write_throughput  0.222
## issued_control.flow.instructions <2e-16 ***
## executed_control.flow.instructions      NA
## max_clock_rate      0.906
## theoretical_flops      0.727
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

```
##
## Residual standard error: 0.1067 on 590 degrees of freedom
## Multiple R-squared:  0.9972, Adjusted R-squared:  0.9971
## F-statistic: 2.326e+04 on 9 and 590 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= lud_internal  GPU= GTX-980  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.36937 -0.03474 -0.00776  0.04262  0.48986
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -23.526462   0.260720  -90.236
## floating_point_operations.single_precision.  -5.617263   0.493022  -11.394
## misc_instructions      8.999012   0.702108   12.817
## multiprocessor_activity -0.842222   0.029972  -28.100
## achieved_occupancy    -0.456527   0.030349  -15.042
## global_load_transactions      NA         NA      NA
## global_store_transactions      NA         NA      NA
## device_memory_read_transactions -0.016197   0.008861   -1.828
## system_memory_write_throughput -0.002339   0.001589   -1.472
## issued_control.flow_instructions -2.350054   0.208296  -11.282
## executed_control.flow_instructions      NA         NA      NA
## max_clock_rate    -0.127522   0.026786   -4.761
## theoretical_flops  -0.710685   0.006382 -111.355
##              Pr(>|t|)
## (Intercept)    < 2e-16 ***
## floating_point_operations.single_precision.  < 2e-16 ***
## misc_instructions      < 2e-16 ***
## multiprocessor_activity < 2e-16 ***
## achieved_occupancy    < 2e-16 ***
## global_load_transactions      NA
## global_store_transactions      NA
## device_memory_read_transactions    0.0681 .
## system_memory_write_throughput    0.1415
## issued_control.flow_instructions  < 2e-16 ***
## executed_control.flow_instructions      NA
## max_clock_rate    2.43e-06 ***
## theoretical_flops  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07799 on 590 degrees of freedom
## Multiple R-squared:  0.9985, Adjusted R-squared:  0.9985
## F-statistic: 4.466e+04 on 9 and 590 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
```

```

## [1] "kernel= lud_internal GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.42436 -0.03677  0.00162  0.03553  0.39652
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -21.484459   0.265821  -80.823
## floating_point_operations.single_precision.    -6.528955   0.494813  -13.195
## misc_instructions      9.942713   0.706669   14.070
## multiprocessor_activity    -0.976438   0.024612  -39.674
## achieved_occupancy    -0.405610   0.030034  -13.505
## global_load_transactions      NA         NA      NA
## global_store_transactions      NA         NA      NA
## device_memory_read_transactions    -0.005855   0.007655   -0.765
## system_memory_write_throughput    -0.002748   0.001565   -1.757
## issued_control.flow_instructions    -2.388950   0.210841  -11.331
## executed_control.flow_instructions      NA         NA      NA
## max_clock_rate    -0.196990   0.026039   -7.565
## theoretical_flops    -0.932208   0.007470 -124.799
##
##              Pr(>|t|)
## (Intercept)    < 2e-16 ***
## floating_point_operations.single_precision.    < 2e-16 ***
## misc_instructions    < 2e-16 ***
## multiprocessor_activity    < 2e-16 ***
## achieved_occupancy    < 2e-16 ***
## global_load_transactions      NA
## global_store_transactions      NA
## device_memory_read_transactions    0.4446
## system_memory_write_throughput    0.0795 .
## issued_control.flow_instructions    < 2e-16 ***
## executed_control.flow_instructions      NA
## max_clock_rate    1.49e-13 ***
## theoretical_flops    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07681 on 590 degrees of freedom
## Multiple R-squared:  0.9985, Adjusted R-squared:  0.9985
## F-statistic: 4.421e+04 on 9 and 590 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= lud_internal GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max

```

```
## -0.33405 -0.04322 -0.01417 0.01772 0.58389
##
## Coefficients:
##               Estimate Std. Error t value
## (Intercept)      -3.452991   0.698940  -4.940
## floating_point_operations.single_precision.  0.565096   0.026146   21.613
## multiprocessor_activity      -0.989601   0.029351  -33.716
## achieved_occupancy          -0.267880   0.034733   -7.712
## global_load_transactions      0.453556   0.026089   17.385
## system_memory_write_throughput -0.003753   0.001861   -2.017
## max_clock_rate             -2.510470   0.082960  -30.261
## theoretical_flops          -0.760959   0.006893 -110.390
##               Pr(>|t|)
## (Intercept)          1.02e-06 ***
## floating_point_operations.single_precision. < 2e-16 ***
## multiprocessor_activity      < 2e-16 ***
## achieved_occupancy          5.25e-14 ***
## global_load_transactions      < 2e-16 ***
## system_memory_write_throughput    0.0442 *
## max_clock_rate             < 2e-16 ***
## theoretical_flops          < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09001 on 592 degrees of freedom
## Multiple R-squared:  0.998, Adjusted R-squared:  0.998
## F-statistic: 4.296e+04 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= lud_internal GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.52660 -0.11351  0.02394  0.08987  0.70851
##
## Coefficients:
##               Estimate Std. Error t value
## (Intercept)     -21.901669   0.383330 -57.135
## floating_point_operations.single_precision.  1.253976   0.014341  87.438
## multiprocessor_activity      -0.811062   0.051317 -15.805
## achieved_occupancy          -0.424690   0.050827  -8.356
## global_load_transactions      -0.248735   0.012623 -19.705
## system_memory_write_throughput -0.008228   0.003735  -2.203
## max_clock_rate             -0.349416   0.043271  -8.075
## theoretical_flops          -0.776810   0.010467 -74.215
##               Pr(>|t|)
## (Intercept)          < 2e-16 ***
## floating_point_operations.single_precision. < 2e-16 ***
## multiprocessor_activity      < 2e-16 ***
## achieved_occupancy          4.64e-16 ***
## global_load_transactions      < 2e-16 ***
## system_memory_write_throughput    0.028 *
```

```

## max_clock_rate                3.79e-15 ***
## theoretical_flops             < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1346 on 592 degrees of freedom
## Multiple R-squared:  0.9956, Adjusted R-squared:  0.9956
## F-statistic: 1.926e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal  GPU= Tesla-K20  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.47382 -0.09881  0.00040  0.10285  0.55038
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)    -22.943054   0.399474  -57.433
## floating_point_operations.single_precision.    1.272738   0.014117   90.158
## multiprocessor_activity    -0.888286   0.044292  -20.055
## achieved_occupancy    -0.363937   0.051610   -7.052
## global_load_transactions    -0.262941   0.012952  -20.302
## system_memory_write_throughput    -0.005252   0.002835   -1.852
## max_clock_rate    -0.170529   0.048264   -3.533
## theoretical_flops    -0.784405   0.010402  -75.406
##              Pr(>|t|)
## (Intercept)    < 2e-16 ***
## floating_point_operations.single_precision.    < 2e-16 ***
## multiprocessor_activity    < 2e-16 ***
## achieved_occupancy    4.95e-12 ***
## global_load_transactions    < 2e-16 ***
## system_memory_write_throughput    0.064452 .
## max_clock_rate    0.000442 ***
## theoretical_flops    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1368 on 592 degrees of freedom
## Multiple R-squared:  0.9954, Adjusted R-squared:  0.9954
## F-statistic: 1.837e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal  GPU= Quadro  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.42426 -0.08105  0.01890  0.07246  0.55437
##
## Coefficients:

```



```

##               Estimate Std. Error t value
## (Intercept)      -21.991573   0.343257 -64.067
## floating_point_operations.single_precision.    1.272407   0.013592  93.615
## multiprocessor_activity      -0.895843   0.040000 -22.396
## achieved_occupancy      -0.365778   0.044991  -8.130
## global_load_transactions      -0.259181   0.011992 -21.613
## system_memory_write_throughput      -0.003539   0.003554  -0.996
## max_clock_rate      -0.308366   0.039855  -7.737
## theoretical_flops      -0.789818   0.009823 -80.402
##               Pr(>|t|)
## (Intercept)      < 2e-16 ***
## floating_point_operations.single_precision.    < 2e-16 ***
## multiprocessor_activity      < 2e-16 ***
## achieved_occupancy      2.52e-15 ***
## global_load_transactions      < 2e-16 ***
## system_memory_write_throughput      0.32
## max_clock_rate      4.40e-14 ***
## theoretical_flops      < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1275 on 592 degrees of freedom
## Multiple R-squared:  0.9961, Adjusted R-squared:  0.996
## F-statistic: 2.145e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal  GPU= GTX-750  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.44932 -0.11785  0.02835  0.10295  0.56841
##
## Coefficients:
##               Estimate Std. Error t value
## (Intercept)      -25.17700   0.44884 -56.094
## floating_point_operations.single_precision.    1.54061   0.02955  52.133
## multiprocessor_activity      -0.93909   0.04004 -23.452
## achieved_occupancy      -0.32497   0.04456  -7.292
## global_load_transactions      -0.52363   0.02861 -18.304
## system_memory_write_throughput      -0.00281   0.00258  -1.089
## max_clock_rate      0.03086   0.04867   0.634
## theoretical_flops      -0.22184   0.05551  -3.996
##               Pr(>|t|)
## (Intercept)      < 2e-16 ***
## floating_point_operations.single_precision.    < 2e-16 ***
## multiprocessor_activity      < 2e-16 ***
## achieved_occupancy      9.83e-13 ***
## global_load_transactions      < 2e-16 ***
## system_memory_write_throughput      0.277
## max_clock_rate      0.526
## theoretical_flops      7.25e-05 ***
## ---

```

```

## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1267 on 592 degrees of freedom
## Multiple R-squared:  0.996, Adjusted R-squared:  0.996
## F-statistic: 2.119e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal  GPU= GTX-980  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.42796 -0.05090 -0.01163  0.07236  0.45180
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -24.024678   0.239949 -100.124
## floating_point_operations.single_precision.    1.241929   0.008827  140.700
## multiprocessor_activity          -0.815833   0.032866  -24.823
## achieved_occupancy              -0.396207   0.032505  -12.189
## global_load_transactions         -0.225475   0.008052  -28.001
## system_memory_write_throughput   -0.002002   0.001748   -1.145
## max_clock_rate                  -0.037654   0.027943   -1.348
## theoretical_flops               -0.710158   0.007022 -101.136
##                                Pr(>|t|)
## (Intercept)                   <2e-16 ***
## floating_point_operations.single_precision.    <2e-16 ***
## multiprocessor_activity          <2e-16 ***
## achieved_occupancy              <2e-16 ***
## global_load_transactions         <2e-16 ***
## system_memory_write_throughput    0.253
## max_clock_rate                  0.178
## theoretical_flops               <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08586 on 592 degrees of freedom
## Multiple R-squared:  0.9982, Adjusted R-squared:  0.9982
## F-statistic: 4.737e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal  GPU= GTX-970  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.46696 -0.03871 -0.00126  0.05753  0.56431
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -23.940749   0.233597 -102.488
## floating_point_operations.single_precision.    1.428159   0.010168  140.458

```

```

## multiprocessor_activity          -0.999667    0.027070   -36.929
## achieved_occupancy               -0.291825    0.031303    -9.323
## global_load_transactions         -0.405961    0.009358   -43.383
## system_memory_write_throughput  -0.002250    0.001727    -1.303
## max_clock_rate                   -0.100008    0.026753    -3.738
## theoretical_flops                -0.942467    0.008189  -115.095
##                                Pr(>|t|)
## (Intercept)                     < 2e-16 ***
## floating_point_operations.single_precision. < 2e-16 ***
## multiprocessor_activity          < 2e-16 ***
## achieved_occupancy               < 2e-16 ***
## global_load_transactions         < 2e-16 ***
## system_memory_write_throughput    0.193126
## max_clock_rate                   0.000203 ***
## theoretical_flops                < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08481 on 592 degrees of freedom
## Multiple R-squared:  0.9982, Adjusted R-squared:  0.9982
## F-statistic: 4.661e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal  GPU= GTX-680  threshCorr= 0.65  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.38583 -0.04662 -0.00623  0.03626  0.52349
##
## Coefficients: (3 not defined because of singularities)
##                                Estimate Std. Error t value
## (Intercept)                  -12.669368    1.039539  -12.187
## floating_point_operations.single_precision. -1.962232    1.291165   -1.520
## misc_instructions              2.382988    1.527965    1.560
## integer_instructions           1.145601    0.140451    8.157
## multiprocessor_activity        -1.190418    0.018232  -65.294
## global_load_transactions       NA             NA       NA
## global_store_transactions      NA             NA       NA
## device_memory_read_transactions -0.007764    0.007592   -1.023
## system_memory_write_throughput -0.002800    0.001816   -1.541
## issued_control.flow_instructions -0.536705    0.357685   -1.500
## executed_control.flow_instructions  NA             NA       NA
## max_clock_rate                -1.248337    0.205214   -6.083
## theoretical_flops             -0.866083    0.014942  -57.961
##                                Pr(>|t|)
## (Intercept)                     < 2e-16 ***
## floating_point_operations.single_precision.  0.129
## misc_instructions                 0.119
## integer_instructions              2.08e-15 ***
## multiprocessor_activity          < 2e-16 ***
## global_load_transactions         NA
## global_store_transactions        NA

```

```

## device_memory_read_transactions          0.307
## system_memory_write_throughput          0.124
## issued_control.flow_instructions        0.134
## executed_control.flow_instructions      NA
## max_clock_rate                          2.12e-09 ***
## theoretical_flops                       < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08775 on 590 degrees of freedom
## Multiple R-squared:  0.9981, Adjusted R-squared:  0.9981
## F-statistic: 3.516e+04 on 9 and 590 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= lud_internal  GPU= Tesla-K40  threshCorr= 0.65  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.41271 -0.04294  0.00287  0.05343  0.57957
##
## Coefficients: (3 not defined because of singularities)
##
##              Estimate Std. Error t value
## (Intercept)      -1.711e+01  3.508e-01 -48.794
## floating_point_operations.single_precision. -6.375e+00  6.463e-01  -9.864
## misc_instructions      6.696e+00  9.109e-01   7.351
## integer_instructions   1.847e+00  6.967e-02  26.508
## multiprocessor_activity -1.240e+00  2.242e-02 -55.285
## global_load_transactions      NA         NA      NA
## global_store_transactions      NA         NA      NA
## device_memory_read_transactions -2.039e-04  8.171e-03  -0.025
## system_memory_write_throughput -4.560e-03  2.644e-03  -1.725
## issued_control.flow_instructions -1.147e+00  2.705e-01  -4.241
## executed_control.flow_instructions      NA         NA      NA
## max_clock_rate      -1.156e-01  3.178e-02  -3.637
## theoretical_flops      -9.343e-01  9.560e-03 -97.727
##
##              Pr(>|t|)
## (Intercept)      < 2e-16 ***
## floating_point_operations.single_precision. < 2e-16 ***
## misc_instructions  6.59e-13 ***
## integer_instructions < 2e-16 ***
## multiprocessor_activity < 2e-16 ***
## global_load_transactions      NA
## global_store_transactions      NA
## device_memory_read_transactions  0.9801
## system_memory_write_throughput  0.0851 .
## issued_control.flow_instructions 2.58e-05 ***
## executed_control.flow_instructions      NA
## max_clock_rate      0.0003 ***
## theoretical_flops      < 2e-16 ***
## ---

```

```

## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09507 on 590 degrees of freedom
## Multiple R-squared:  0.9978, Adjusted R-squared:  0.9978
## F-statistic: 3.007e+04 on 9 and 590 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= lud_internal  GPU= Tesla-K20  threshCorr= 0.65  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.37315 -0.04841  0.00085  0.04699  0.50091
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -16.710798   0.300118  -55.681
## floating_point_operations.single_precision.    -2.613806   0.821027   -3.184
## misc_instructions      1.056219   1.196648    0.883
## integer_instructions    1.989661   0.066697   29.831
## multiprocessor_activity   -1.179278   0.018373  -64.185
## global_load_transactions         NA         NA         NA
## global_store_transactions        NA         NA         NA
## device_memory_read_transactions   -0.002362   0.007339   -0.322
## system_memory_write_throughput    -0.003462   0.001832   -1.890
## issued_control.flow_instructions    0.591694   0.362729    1.631
## executed_control.flow_instructions         NA         NA         NA
## max_clock_rate      0.141948   0.045107    3.147
## theoretical_flops    -0.945034   0.008669 -109.013
##              Pr(>|t|)
## (Intercept)    < 2e-16 ***
## floating_point_operations.single_precision.  0.00153 **
## misc_instructions  0.37779
## integer_instructions    < 2e-16 ***
## multiprocessor_activity   < 2e-16 ***
## global_load_transactions         NA
## global_store_transactions        NA
## device_memory_read_transactions   0.74770
## system_memory_write_throughput    0.05930 .
## issued_control.flow_instructions    0.10338
## executed_control.flow_instructions         NA
## max_clock_rate      0.00173 **
## theoretical_flops    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08829 on 590 degrees of freedom
## Multiple R-squared:  0.9981, Adjusted R-squared:  0.9981
## F-statistic: 3.438e+04 on 9 and 590 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit

```

```
## may be misleading

## [1] "kernel= lud_internal GPU= Quadro threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.40642 -0.03790 -0.00612  0.03669  0.56685
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -1.687e+01  2.692e-01 -62.675
## floating_point_operations.single_precision. -5.956e+00  5.191e-01 -11.475
## misc_instructions      6.055e+00  7.374e-01   8.211
## integer_instructions   1.870e+00  5.652e-02  33.079
## multiprocessor_activity -1.226e+00  1.579e-02 -77.624
## global_load_transactions      NA         NA      NA
## global_store_transactions      NA         NA      NA
## device_memory_read_transactions -1.804e-03  6.906e-03  -0.261
## system_memory_write_throughput  4.149e-05  2.178e-03   0.019
## issued_control.flow_instructions -9.415e-01  2.208e-01  -4.264
## executed_control.flow_instructions      NA         NA      NA
## max_clock_rate    -1.232e-01  2.561e-02  -4.810
## theoretical_flops  -9.417e-01  7.702e-03 -122.268
##
##              Pr(>|t|)
## (Intercept)    < 2e-16 ***
## floating_point_operations.single_precision. < 2e-16 ***
## misc_instructions  1.39e-15 ***
## integer_instructions < 2e-16 ***
## multiprocessor_activity < 2e-16 ***
## global_load_transactions      NA
## global_store_transactions      NA
## device_memory_read_transactions  0.794
## system_memory_write_throughput  0.985
## issued_control.flow_instructions  2.33e-05 ***
## executed_control.flow_instructions      NA
## max_clock_rate    1.92e-06 ***
## theoretical_flops < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07798 on 590 degrees of freedom
## Multiple R-squared:  0.9985, Adjusted R-squared:  0.9985
## F-statistic: 4.47e+04 on 9 and 590 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= lud_internal GPU= GTX-750 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
```

```
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.33463 -0.03708  0.00520  0.04004  0.58316
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -1.723e+01  3.249e-01 -53.018
## floating_point_operations.single_precision. -6.621e+00  6.220e-01 -10.645
## misc_instructions      6.931e+00  9.178e-01  7.551
## integer_instructions   1.968e+00  9.243e-02  21.290
## multiprocessor_activity -1.230e+00  1.789e-02 -68.755
## global_load_transactions      NA         NA      NA
## global_store_transactions      NA         NA      NA
## device_memory_read_transactions -3.486e-04  7.549e-03  -0.046
## system_memory_write_throughput -2.599e-03  1.821e-03  -1.428
## issued_control.flow_instructions -1.258e+00  2.613e-01  -4.815
## executed_control.flow_instructions      NA         NA      NA
## max_clock_rate    -1.539e-01  3.553e-02  -4.331
## theoretical_flops -1.054e+00  6.422e-02 -16.411
##              Pr(>|t|)
## (Intercept)      < 2e-16 ***
## floating_point_operations.single_precision. < 2e-16 ***
## misc_instructions 1.65e-13 ***
## integer_instructions < 2e-16 ***
## multiprocessor_activity < 2e-16 ***
## global_load_transactions      NA
## global_store_transactions      NA
## device_memory_read_transactions 0.963
## system_memory_write_throughput 0.154
## issued_control.flow_instructions 1.88e-06 ***
## executed_control.flow_instructions      NA
## max_clock_rate    1.75e-05 ***
## theoretical_flops < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08937 on 590 degrees of freedom
## Multiple R-squared:  0.998, Adjusted R-squared:  0.998
## F-statistic: 3.316e+04 on 9 and 590 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= lud_internal GPU= GTX-980 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.39336 -0.02841  0.00565  0.04296  0.59068
##
## Coefficients: (3 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -14.947856  1.225010 -12.202
```

```

## floating_point_operations.single_precision. -7.988987 0.848734 -9.413
## misc_instructions 6.935957 0.792735 8.749
## integer_instructions 2.988599 0.523351 5.711
## multiprocessor_activity -1.164901 0.022464 -51.857
## global_load_transactions NA NA NA
## global_store_transactions NA NA NA
## device_memory_read_transactions -0.016252 0.010447 -1.556
## system_memory_write_throughput -0.002499 0.001820 -1.373
## issued_control.flow_instructions -0.901207 0.281375 -3.203
## executed_control.flow_instructions NA NA NA
## max_clock_rate -0.161945 0.035545 -4.556
## theoretical_flops -1.079793 0.065976 -16.366
## Pr(>|t|)
## (Intercept) < 2e-16 ***
## floating_point_operations.single_precision. < 2e-16 ***
## misc_instructions < 2e-16 ***
## integer_instructions 1.79e-08 ***
## multiprocessor_activity < 2e-16 ***
## global_load_transactions NA
## global_store_transactions NA
## device_memory_read_transactions 0.12032
## system_memory_write_throughput 0.17024
## issued_control.flow_instructions 0.00143 **
## executed_control.flow_instructions NA
## max_clock_rate 6.34e-06 ***
## theoretical_flops < 2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0893 on 590 degrees of freedom
## Multiple R-squared: 0.9981, Adjusted R-squared: 0.998
## F-statistic: 3.405e+04 on 9 and 590 DF, p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= lud_internal GPU= GTX-970 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
## Min 1Q Median 3Q Max
## -0.42303 -0.03421 0.00329 0.04002 0.60962
##
## Coefficients: (4 not defined because of singularities)
## Estimate Std. Error t value
## (Intercept) -19.573001 0.257230 -76.092
## floating_point_operations.single_precision. -4.408608 0.536441 -8.218
## misc_instructions 6.888178 0.765370 9.000
## integer_instructions NA NA NA
## multiprocessor_activity -1.234219 0.017762 -69.488
## global_load_transactions NA NA NA
## global_store_transactions NA NA NA
## device_memory_read_transactions -0.002595 0.008746 -0.297

```



```

## system_memory_write_throughput      -0.002457    0.001788    -1.374
## issued_control.flow.instructions     -1.456952    0.227757    -6.397
## executed_control.flow.instructions    NA          NA          NA
## max_clock_rate                       -0.114428    0.028935    -3.955
## theoretical_flops                    -0.936862    0.008530   -109.828
##                                     Pr(>|t|)
## (Intercept)                          < 2e-16 ***
## floating_point_operations.single_precision. 1.31e-15 ***
## misc_instructions                     < 2e-16 ***
## integer_instructions                  NA
## multiprocessor_activity                < 2e-16 ***
## global_load_transactions              NA
## global_store_transactions             NA
## device_memory_read_transactions       0.767
## system_memory_write_throughput        0.170
## issued_control.flow.instructions      3.23e-10 ***
## executed_control.flow.instructions    NA
## max_clock_rate                       8.60e-05 ***
## theoretical_flops                     < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08781 on 591 degrees of freedom
## Multiple R-squared:  0.9981, Adjusted R-squared:  0.998
## F-statistic: 3.804e+04 on 8 and 591 DF,  p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= lud_internal  GPU= GTX-680  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.36509 -0.04649 -0.01554  0.02392  0.56331
##
## Coefficients:
##                                     Estimate Std. Error t value
## (Intercept)                       11.847197   3.267947   3.625
## floating_point_operations.single_precision. -1.762260   0.521869  -3.377
## multiprocessor_activity             -1.153720   0.018459 -62.502
## global_load_transactions             1.461080   0.225536   6.478
## system_memory_write_throughput      -0.003476   0.001921  -1.810
## issued_control.flow.instructions      1.321784   0.297616   4.441
## max_clock_rate                     -2.729317   0.095335 -28.629
## theoretical_flops                   -0.756803   0.007098 -106.624
##                                     Pr(>|t|)
## (Intercept)                       0.000314 ***
## floating_point_operations.single_precision. 0.000781 ***
## multiprocessor_activity                < 2e-16 ***
## global_load_transactions              1.95e-10 ***
## system_memory_write_throughput        0.070839 .
## issued_control.flow.instructions      1.07e-05 ***

```

```

## max_clock_rate < 2e-16 ***
## theoretical_flops < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09289 on 592 degrees of freedom
## Multiple R-squared:  0.9979, Adjusted R-squared:  0.9979
## F-statistic: 4.033e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.43144 -0.10992  0.01306  0.09601  0.66612
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)      -34.929368   3.668573  -9.521
## floating_point_operations.single_precision.    3.837778   0.658966   5.824
## multiprocessor_activity      -1.181597   0.032733 -36.098
## global_load_transactions      -1.316675   0.271338  -4.853
## system_memory_write_throughput    -0.008878   0.003899  -2.277
## issued_control.flow_instructions    -1.514534   0.388144  -3.902
## max_clock_rate      -0.327663   0.045203  -7.249
## theoretical_flops      -0.773612   0.010919 -70.850
##              Pr(>|t|)
## (Intercept)      < 2e-16 ***
## floating_point_operations.single_precision. 9.43e-09 ***
## multiprocessor_activity      < 2e-16 ***
## global_load_transactions      1.56e-06 ***
## system_memory_write_throughput    0.023151 *
## issued_control.flow_instructions    0.000106 ***
## max_clock_rate      1.32e-12 ***
## theoretical_flops      < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1405 on 592 degrees of freedom
## Multiple R-squared:  0.9952, Adjusted R-squared:  0.9952
## F-statistic: 1.766e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.44748 -0.09623  0.00828  0.09893  0.78604
##
## Coefficients:

```

```

##                                Estimate Std. Error t value
## (Intercept)                   -45.569189   4.867279  -9.362
## floating_point_operations.single_precision.    5.742183   0.923193   6.220
## multiprocessor_activity        -1.200137   0.028930 -41.484
## global_load_transactions       -2.098652   0.378272  -5.548
## system_memory_write_throughput -0.004852   0.002897  -1.675
## issued_control.flow_instructions -2.634656   0.545357  -4.831
## max_clock_rate                 -0.338789   0.066304  -5.110
## theoretical_flops              -0.780931   0.010607 -73.622
##                                Pr(>|t|)
## (Intercept)                   < 2e-16 ***
## floating_point_operations.single_precision. 9.41e-10 ***
## multiprocessor_activity        < 2e-16 ***
## global_load_transactions       4.36e-08 ***
## system_memory_write_throughput    0.0945 .
## issued_control.flow_instructions 1.73e-06 ***
## max_clock_rate                 4.36e-07 ***
## theoretical_flops              < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1397 on 592 degrees of freedom
## Multiple R-squared:  0.9952, Adjusted R-squared:  0.9952
## F-statistic: 1.761e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal GPU= Quadro threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.43283 -0.05279  0.00407  0.05666  0.70587
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -38.540399   3.466981 -11.116
## floating_point_operations.single_precision.    4.453753   0.626755   7.106
## multiprocessor_activity        -1.193078   0.026378 -45.231
## global_load_transactions       -1.571452   0.257695  -6.098
## system_memory_write_throughput -0.004448   0.003668  -1.212
## issued_control.flow_instructions -1.871120   0.369473  -5.064
## max_clock_rate                 -0.309411   0.041585  -7.440
## theoretical_flops              -0.782553   0.010150 -77.096
##                                Pr(>|t|)
## (Intercept)                   < 2e-16 ***
## floating_point_operations.single_precision. 3.45e-12 ***
## multiprocessor_activity        < 2e-16 ***
## global_load_transactions       1.94e-09 ***
## system_memory_write_throughput    0.226
## issued_control.flow_instructions 5.48e-07 ***
## max_clock_rate                 3.55e-13 ***
## theoretical_flops              < 2e-16 ***
## ---

```

```

## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1316 on 592 degrees of freedom
## Multiple R-squared:  0.9958, Adjusted R-squared:  0.9958
## F-statistic: 2.013e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal  GPU= GTX-750  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.38114 -0.09488 -0.00126  0.06298  0.84052
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -58.507340    2.976073  -19.659
## floating_point_operations.single_precision.    7.706021    0.532307   14.477
## multiprocessor_activity        -1.254544    0.023811  -52.687
## global_load_transactions       -3.118417    0.224734  -13.876
## system_memory_write_throughput  -0.002817    0.002432   -1.158
## issued_control.flow_instructions  -3.574775    0.308723  -11.579
## max_clock_rate                  0.059233    0.045601    1.299
## theoretical_flops              -0.021824    0.054802   -0.398
##                                Pr(>|t|)
## (Intercept)                   <2e-16 ***
## floating_point_operations.single_precision.    <2e-16 ***
## multiprocessor_activity        <2e-16 ***
## global_load_transactions       <2e-16 ***
## system_memory_write_throughput    0.247
## issued_control.flow_instructions  <2e-16 ***
## max_clock_rate                  0.194
## theoretical_flops              0.691
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1194 on 592 degrees of freedom
## Multiple R-squared:  0.9965, Adjusted R-squared:  0.9964
## F-statistic: 2.385e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal  GPU= GTX-980  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.41743 -0.04000 -0.01237  0.05106  0.65893
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -38.287492    2.216832  -17.271
## floating_point_operations.single_precision.    4.079748    0.406328   10.041

```

```

## multiprocessor_activity          -1.199642    0.022497 -53.324
## global_load_transactions          -1.397154    0.167324  -8.350
## system_memory_write_throughput    -0.002195    0.001880  -1.167
## issued_control.flow.instructions  -1.664639    0.239229  -6.958
## max_clock_rate                    -0.036453    0.030623  -1.190
## theoretical_flops                 -0.704444    0.007537 -93.459
##                                Pr(>|t|)
## (Intercept)                       < 2e-16 ***
## floating_point_operations.single_precision. < 2e-16 ***
## multiprocessor_activity            < 2e-16 ***
## global_load_transactions           4.85e-16 ***
## system_memory_write_throughput      0.244
## issued_control.flow.instructions    9.15e-12 ***
## max_clock_rate                     0.234
## theoretical_flops                  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09233 on 592 degrees of freedom
## Multiple R-squared:  0.9979, Adjusted R-squared:  0.9979
## F-statistic: 4.095e+04 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= lud_internal  GPU= GTX-970  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.42319 -0.03423  0.00321  0.04008  0.60800
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -36.570295   2.055174  -17.794
## floating_point_operations.single_precision.  3.879918   0.375446   10.334
## multiprocessor_activity        -1.234325   0.017744  -69.562
## global_load_transactions       -1.418458   0.154346   -9.190
## system_memory_write_throughput -0.002454   0.001787   -1.373
## issued_control.flow.instructions -1.441548   0.221588   -6.506
## max_clock_rate                 -0.112804   0.028391   -3.973
## theoretical_flops              -0.936879   0.008524 -109.917
##                                Pr(>|t|)
## (Intercept)                       < 2e-16 ***
## floating_point_operations.single_precision. < 2e-16 ***
## multiprocessor_activity            < 2e-16 ***
## global_load_transactions           < 2e-16 ***
## system_memory_write_throughput      0.17
## issued_control.flow.instructions    1.65e-10 ***
## max_clock_rate                     7.97e-05 ***
## theoretical_flops                  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08774 on 592 degrees of freedom

```

```

## Multiple R-squared:  0.9981, Adjusted R-squared:  0.998
## F-statistic: 4.354e+04 on 7 and 592 DF,  p-value: < 2.2e-16

## [1] "kernel= needle_cuda_shared_1 GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.30921 -0.03987  0.00373  0.03653  0.41455
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -1.132e+02  3.004e+02  -0.377
## registers.per.thread           -1.752e+01  1.263e+02  -0.139
## issued_load.store_instructions -1.635e+00  1.167e+00  -1.401
## active_cycles                   8.181e-01  2.613e-02  31.305
## active_warps                   3.497e-01  2.915e-02  11.997
## multiprocessor_activity        -9.391e-01  2.643e-02 -35.533
## instructions_per_warp          2.120e+01  1.442e+00  14.699
## shared_memory_store_transactions_per_request 3.445e+00  1.469e+02   0.023
## global_load_transactions_per_request 2.141e-01  9.889e-02   2.165
## system_memory_write_throughput -1.509e-03  1.356e-03  -1.113
## issue_slots                    1.312e+00  1.159e+00   1.132
## max_clock_rate                 1.928e+00  1.451e-01  13.281
## theoretical_flops             -9.795e-01  2.545e-02 -38.484
##                                Pr(>|t|)
## (Intercept)                   0.7065
## registers.per.thread           0.8897
## issued_load.store_instructions 0.1619
## active_cycles                  <2e-16 ***
## active_warps                  <2e-16 ***
## multiprocessor_activity        <2e-16 ***
## instructions_per_warp          <2e-16 ***
## shared_memory_store_transactions_per_request 0.9813
## global_load_transactions_per_request 0.0308 *
## system_memory_write_throughput 0.2661
## issue_slots                   0.2581
## max_clock_rate                 <2e-16 ***
## theoretical_flops              <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08561 on 587 degrees of freedom
## Multiple R-squared:  0.9715, Adjusted R-squared:  0.9709
## F-statistic: 1665 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1 GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:

```

```

##      Min      1Q   Median      3Q      Max
## -0.30370 -0.04852 -0.00261  0.05535  0.39486
##
## Coefficients:
##
##              Estimate Std. Error t value
## (Intercept)      -1.873e+02  3.307e+02  -0.566
## registers.per.thread      1.535e+01  1.391e+02   0.110
## issued_load.store_instructions      5.389e+00  9.339e-01   5.771
## active_cycles      8.784e-01  2.557e-02  34.347
## active_warps      2.228e-01  2.905e-02   7.671
## multiprocessor_activity     -1.036e+00  2.539e-02 -40.798
## instructions_per_warp      2.177e+01  1.315e+00  16.558
## shared_memory_store_transactions_per_request     -2.545e+01  1.617e+02  -0.157
## global_load_transactions_per_request     -4.254e-01  8.063e-02  -5.276
## system_memory_write_throughput      1.612e-04  1.317e-03   0.122
## issue_slots     -5.561e+00  9.297e-01  -5.981
## max_clock_rate      2.546e-01  4.590e-02   5.546
## theoretical_flops     -9.488e-01  2.379e-02 -39.887
##
##              Pr(>|t|)
## (Intercept)          0.571
## registers.per.thread          0.912
## issued_load.store_instructions    1.28e-08 ***
## active_cycles      < 2e-16 ***
## active_warps      7.12e-14 ***
## multiprocessor_activity      < 2e-16 ***
## instructions_per_warp      < 2e-16 ***
## shared_memory_store_transactions_per_request    0.875
## global_load_transactions_per_request    1.86e-07 ***
## system_memory_write_throughput    0.903
## issue_slots      3.85e-09 ***
## max_clock_rate      4.42e-08 ***
## theoretical_flops      < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09428 on 587 degrees of freedom
## Multiple R-squared:  0.9683, Adjusted R-squared:  0.9676
## F-statistic: 1492 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1 GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min      1Q   Median      3Q      Max
## -0.34168 -0.05124 -0.00667  0.05743  0.39560
##
## Coefficients:
##
##              Estimate Std. Error t value
## (Intercept)     -1.327e+02  3.287e+02  -0.404
## registers.per.thread      3.350e-01  1.382e+02   0.002
## issued_load.store_instructions      3.146e+00  1.185e+00   2.655
## active_cycles      8.863e-01  2.545e-02  34.824

```

```

## active_warps                2.743e-01  3.001e-02  9.141
## multiprocessor_activity     -1.024e+00  2.602e-02 -39.373
## instructions_per_warp       1.882e+01  1.628e+00  11.559
## shared_memory_store_transactions_per_request -8.620e+00  1.607e+02 -0.054
## global_load_transactions_per_request -2.452e-01  1.020e-01 -2.403
## system_memory_write_throughput -2.349e-03  1.775e-03 -1.324
## issue_slots                 -3.389e+00  1.184e+00 -2.863
## max_clock_rate              1.217e-01  6.319e-02  1.926
## theoretical_flops           -9.379e-01  2.408e-02 -38.951
##                               Pr(>|t|)
## (Intercept)                 0.68653
## registers.per.thread        0.99807
## issued_load.store_instructions 0.00814 **
## active_cycles                < 2e-16 ***
## active_warps                < 2e-16 ***
## multiprocessor_activity     < 2e-16 ***
## instructions_per_warp       < 2e-16 ***
## shared_memory_store_transactions_per_request 0.95724
## global_load_transactions_per_request 0.01655 *
## system_memory_write_throughput 0.18605
## issue_slots                 0.00435 **
## max_clock_rate              0.05461 .
## theoretical_flops           < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09367 on 587 degrees of freedom
## Multiple R-squared:  0.967, Adjusted R-squared:  0.9663
## F-statistic: 1432 on 12 and 587 DF, p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1 GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.30524 -0.03105 -0.00001  0.03891  0.36209
##
## Coefficients:
##                               Estimate Std. Error t value
## (Intercept)                 -1.028e+02  2.957e+02  -0.348
## registers.per.thread         -8.715e+00  1.244e+02  -0.070
## issued_load.store_instructions  1.978e+00  9.159e-01   2.159
## active_cycles                8.564e-01  2.364e-02  36.234
## active_warps                2.900e-01  2.647e-02  10.954
## multiprocessor_activity     -1.022e+00  2.456e-02 -41.626
## instructions_per_warp       1.738e+01  1.271e+00  13.675
## shared_memory_store_transactions_per_request 1.366e+00  1.446e+02   0.009
## global_load_transactions_per_request -1.078e-01  8.034e-02 -1.342
## system_memory_write_throughput  1.311e-03  1.378e-03   0.951
## issue_slots                 -2.226e+00  9.128e-01  -2.439
## max_clock_rate              2.204e-01  4.238e-02   5.200
## theoretical_flops           -9.165e-01  2.190e-02 -41.847

```



```

##                                Pr(>|t|)
## (Intercept)                    0.7283
## registers.per.thread            0.9442
## issued_load.store_instructions  0.0312 *
## active_cycles                   < 2e-16 ***
## active_warps                   < 2e-16 ***
## multiprocessor_activity         < 2e-16 ***
## instructions_per_warp           < 2e-16 ***
## shared_memory_store_transactions_per_request 0.9925
## global_load_transactions_per_request 0.1802
## system_memory_write_throughput 0.3418
## issue_slots                    0.0150 *
## max_clock_rate                  2.75e-07 ***
## theoretical_flops               < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08426 on 587 degrees of freedom
## Multiple R-squared:  0.9712, Adjusted R-squared:  0.9707
## F-statistic: 1652 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1  GPU= GTX-750  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.30293 -0.04390 -0.00600  0.05673  0.38713
##
## Coefficients:
##                                Estimate Std. Error t value
## (Intercept)                   -2.778e+02  3.169e+02  -0.877
## registers.per.thread            4.883e+01  1.332e+02   0.366
## issued_load.store_instructions  5.283e+00  8.828e-01   5.984
## active_cycles                   8.471e-01  2.839e-02  29.840
## active_warps                   1.829e-01  3.311e-02   5.524
## multiprocessor_activity        -9.913e-01  2.715e-02 -36.517
## instructions_per_warp           2.368e+01  1.431e+00  16.550
## shared_memory_store_transactions_per_request -6.523e+01  1.549e+02  -0.421
## global_load_transactions_per_request -3.967e-01  7.546e-02  -5.257
## system_memory_write_throughput  1.118e-04  1.249e-03   0.090
## issue_slots                    -5.418e+00  8.775e-01  -6.174
## max_clock_rate                 1.962e-01  4.650e-02   4.220
## theoretical_flops              -1.191e+00  6.307e-02 -18.882
##                                Pr(>|t|)
## (Intercept)                    0.381
## registers.per.thread            0.714
## issued_load.store_instructions  3.78e-09 ***
## active_cycles                   < 2e-16 ***
## active_warps                   5.00e-08 ***
## multiprocessor_activity         < 2e-16 ***
## instructions_per_warp           < 2e-16 ***
## shared_memory_store_transactions_per_request 0.674

```

```

## global_load_transactions_per_request      2.05e-07 ***
## system_memory_write_throughput           0.929
## issue_slots                             1.24e-09 ***
## max_clock_rate                          2.83e-05 ***
## theoretical_flops                        < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09014 on 587 degrees of freedom
## Multiple R-squared:  0.9649, Adjusted R-squared:  0.9641
## F-statistic: 1343 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1  GPU= GTX-980  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.31479 -0.03950 -0.00537  0.05010  0.39853
##
## Coefficients:
##
##              Estimate Std. Error t value
## (Intercept)      -2.624e+02  2.885e+02  -0.909
## registers.per.thread      1.183e+01  1.211e+02   0.098
## issued_load.store_instructions      4.717e+00  7.981e-01   5.910
## active_cycles      9.298e-01  2.304e-02  40.358
## active_warps      2.286e-01  2.790e-02   8.194
## multiprocessor_activity     -1.034e+00  2.372e-02 -43.602
## instructions_per_warp      3.573e+01  3.600e+00   9.928
## shared_memory_store_transactions_per_request     -2.999e+01  1.408e+02  -0.213
## global_load_transactions_per_request     -3.636e-01  6.840e-02  -5.315
## system_memory_write_throughput     -1.049e-04  1.139e-03  -0.092
## issue_slots     -4.913e+00  7.951e-01  -6.179
## max_clock_rate      2.087e-01  4.205e-02   4.964
## theoretical_flops     -1.205e+00  5.686e-02 -21.186
##
##              Pr(>|t|)
## (Intercept)          0.364
## registers.per.thread          0.922
## issued_load.store_instructions    5.79e-09 ***
## active_cycles              < 2e-16 ***
## active_warps              1.59e-15 ***
## multiprocessor_activity        < 2e-16 ***
## instructions_per_warp          < 2e-16 ***
## shared_memory_store_transactions_per_request    0.831
## global_load_transactions_per_request    1.52e-07 ***
## system_memory_write_throughput          0.927
## issue_slots              1.21e-09 ***
## max_clock_rate            9.06e-07 ***
## theoretical_flops          < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08201 on 587 degrees of freedom

```

```

## Multiple R-squared:  0.9686, Adjusted R-squared:  0.9679
## F-statistic: 1507 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1  GPU= GTX-970  threshCorr= 0.5  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.33337 -0.03871 -0.01059  0.04874  0.44339
##
## Coefficients: (2 not defined because of singularities)
##
##              Estimate Std. Error t value
## (Intercept)    -2.417e+01  1.930e+00 -12.522
## registers.per.thread      1.400e+00  6.729e-01   2.081
## issued_load.store_instructions  3.232e+00  7.900e-01   4.091
## active_cycles      9.945e-01  2.499e-02  39.796
## active_warps      1.706e-01  2.984e-02   5.716
## multiprocessor_activity    -1.093e+00  2.530e-02 -43.214
## instructions_per_warp              NA              NA      NA
## shared_memory_store_transactions_per_request      NA              NA      NA
## global_load_transactions_per_request    -2.500e-01  6.797e-02  -3.678
## system_memory_write_throughput      1.578e-04  1.153e-03   0.137
## issue_slots    -3.384e+00  7.882e-01  -4.293
## max_clock_rate      2.916e-01  4.036e-02   7.226
## theoretical_flops    -1.035e+00  2.384e-02 -43.419
##
##              Pr(>|t|)
## (Intercept)    < 2e-16 ***
## registers.per.thread      0.037878 *
## issued_load.store_instructions  4.89e-05 ***
## active_cycles    < 2e-16 ***
## active_warps      1.74e-08 ***
## multiprocessor_activity    < 2e-16 ***
## instructions_per_warp              NA
## shared_memory_store_transactions_per_request      NA
## global_load_transactions_per_request    0.000257 ***
## system_memory_write_throughput      0.891203
## issue_slots      2.06e-05 ***
## max_clock_rate      1.55e-12 ***
## theoretical_flops    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08285 on 589 degrees of freedom
## Multiple R-squared:  0.9671, Adjusted R-squared:  0.9666
## F-statistic: 1734 on 10 and 589 DF,  p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= needle_cuda_shared_1  GPU= GTX-680  threshCorr= 0.5  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)

```

```

##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.36888 -0.10033 -0.01705  0.11608  0.38840
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -17.577634   1.123558 -15.645 < 2e-16 ***
## instructions_per_warp      1.624241   0.245271   6.622 7.95e-11 ***
## active_warps       0.074183   0.009794   7.574 1.40e-13 ***
## active_cycles      0.847123   0.033613  25.202 < 2e-16 ***
## multiprocessor_activity -1.034404   0.030414 -34.011 < 2e-16 ***
## system_memory_write_throughput -0.002030   0.002156  -0.942  0.347
## max_clock_rate    -1.638471   0.102739 -15.948 < 2e-16 ***
## theoretical_flops    -0.801596   0.021384 -37.485 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1368 on 592 degrees of freedom
## Multiple R-squared:  0.9265, Adjusted R-squared:  0.9256
## F-statistic: 1065 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1 GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.43233 -0.13018  0.01116  0.11966  0.48626
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -3.785339   0.698668  -5.418 8.78e-08 ***
## instructions_per_warp      -1.748765   0.105004 -16.654 < 2e-16 ***
## active_warps       0.123990   0.010964  11.309 < 2e-16 ***
## active_cycles      0.669014   0.033034  20.252 < 2e-16 ***
## multiprocessor_activity -0.912816   0.031065 -29.384 < 2e-16 ***
## system_memory_write_throughput -0.003347   0.002175  -1.539  0.124
## max_clock_rate    -0.296531   0.049966  -5.935 5.01e-09 ***
## theoretical_flops    -0.678697   0.021365 -31.767 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1572 on 592 degrees of freedom
## Multiple R-squared:  0.9109, Adjusted R-squared:  0.9099
## F-statistic: 865 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1 GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:

```

```

##      Min      1Q   Median      3Q      Max
## -0.41471 -0.12159  0.00855  0.12270  0.48599
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -3.835002   0.701458  -5.467 6.75e-08 ***
## instructions_per_warp -1.630470   0.107032 -15.233 < 2e-16 ***
## active_warps      0.132197   0.010936  12.088 < 2e-16 ***
## active_cycles     0.648044   0.033302  19.460 < 2e-16 ***
## multiprocessor_activity -0.912079   0.031672 -28.798 < 2e-16 ***
## system_memory_write_throughput -0.009033   0.002939  -3.074 0.00221 **
## max_clock_rate    -0.380168   0.054573  -6.966 8.69e-12 ***
## theoretical_flops   -0.681155   0.021568 -31.581 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1566 on 592 degrees of freedom
## Multiple R-squared:  0.9068, Adjusted R-squared:  0.9057
## F-statistic: 823.2 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1 GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min      1Q   Median      3Q      Max
## -0.43314 -0.10473 -0.00257  0.11256  0.48335
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -4.928951   0.710044  -6.942 1.02e-11 ***
## instructions_per_warp -1.698208   0.104866 -16.194 < 2e-16 ***
## active_warps      0.126366   0.010675  11.838 < 2e-16 ***
## active_cycles     0.642887   0.032467  19.801 < 2e-16 ***
## multiprocessor_activity -0.892893   0.034640 -25.776 < 2e-16 ***
## system_memory_write_throughput -0.005184   0.002496  -2.076 0.03829 *
## max_clock_rate    -0.153285   0.047999  -3.193 0.00148 **
## theoretical_flops   -0.671797   0.021083 -31.864 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1548 on 592 degrees of freedom
## Multiple R-squared:  0.9021, Adjusted R-squared:  0.901
## F-statistic: 779.6 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1 GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min      1Q   Median      3Q      Max
## -0.38951 -0.09793 -0.01521  0.09341  0.42218

```

```
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      4.908019   1.388277   3.535 0.000439 ***
## instructions_per_warp -3.196872   0.252848 -12.643 < 2e-16 ***
## active_warps       0.106702   0.009698  11.002 < 2e-16 ***
## active_cycles      0.561258   0.036295  15.464 < 2e-16 ***
## multiprocessor_activity -0.783626   0.034752 -22.549 < 2e-16 ***
## system_memory_write_throughput -0.003739   0.002007  -1.863 0.062954 .
## max_clock_rate     -0.027700   0.061801  -0.448 0.654170
## theoretical_flops   -0.217136   0.076369  -2.843 0.004620 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1464 on 592 degrees of freedom
## Multiple R-squared:  0.9065, Adjusted R-squared:  0.9054
## F-statistic: 820.4 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1 GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.38954 -0.04803 -0.00672  0.06645  0.37761
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -13.274220   0.482153 -27.531 < 2e-16 ***
## instructions_per_warp -1.291688   0.063911 -20.211 < 2e-16 ***
## active_warps       0.039420   0.006518   6.048 2.59e-09 ***
## active_cycles      1.035958   0.021670  47.806 < 2e-16 ***
## multiprocessor_activity -1.157557   0.020884 -55.427 < 2e-16 ***
## system_memory_write_throughput -0.001463   0.001295  -1.130  0.259
## max_clock_rate     0.337476   0.033015  10.222 < 2e-16 ***
## theoretical_flops   -0.780582   0.012815 -60.911 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09397 on 592 degrees of freedom
## Multiple R-squared:  0.9584, Adjusted R-squared:  0.9579
## F-statistic: 1947 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_1 GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.35139 -0.03798 -0.01149  0.05767  0.43177
##
## Coefficients:
```

```

##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -2.0512935   0.3936187  -5.211 2.59e-07 ***
## instructions_per_warp -3.0345859   0.0676892 -44.831 < 2e-16 ***
## active_warps       0.0193061   0.0061648   3.132 0.00182 **
## active_cycles      1.0908719   0.0204590  53.320 < 2e-16 ***
## multiprocessor_activity -1.1883368   0.0197174 -60.268 < 2e-16 ***
## system_memory_write_throughput -0.0001225   0.0011848  -0.103 0.91766
## max_clock_rate     0.2554806   0.0287667   8.881 < 2e-16 ***
## theoretical_flops   -1.1334890   0.0160286 -70.717 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08563 on 592 degrees of freedom
## Multiple R-squared:  0.9647, Adjusted R-squared:  0.9643
## F-statistic: 2313 on 7 and 592 DF, p-value: < 2.2e-16

## [1] "kernel= needle_cuda_shared_2 GPU= GTX-680 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.35166 -0.08875 -0.00301  0.08498  0.36173
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -2.684157   1.965363  -1.366 0.17255
## active_warps       0.377680   0.048898   7.724 4.90e-14
## instructions_per_warp -1.793979   0.365147  -4.913 1.16e-06
## elapsed_cycles_sm    0.673842   0.092094   7.317 8.38e-13
## issued_load.store_instructions -0.509056   0.045587 -11.167 < 2e-16
## active_cycles      0.059910   0.083600   0.717 0.47389
## multiprocessor_activity 0.057214   0.094708   0.604 0.54601
## achieved_occupancy   0.197183   0.059520   3.313 0.00098
## global_load_transactions_per_request 0.132811   0.041269   3.218 0.00136
## device_memory_read_transactions -0.005802   0.002108  -2.753 0.00609
## system_memory_write_throughput -0.029753   0.007420  -4.010 6.86e-05
## max_clock_rate     -0.846302   0.131122  -6.454 2.28e-10
## theoretical_flops   -0.513130   0.026662 -19.246 < 2e-16
##
## (Intercept)
## active_warps      ***
## instructions_per_warp ***
## elapsed_cycles_sm  ***
## issued_load.store_instructions ***
## active_cycles
## multiprocessor_activity
## achieved_occupancy ***
## global_load_transactions_per_request **
## device_memory_read_transactions **
## system_memory_write_throughput ***
## max_clock_rate    ***
## theoretical_flops  ***

```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1179 on 587 degrees of freedom
## Multiple R-squared:  0.9528, Adjusted R-squared:  0.9518
## F-statistic: 986.4 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.39340 -0.09066 -0.00381  0.08719  0.31614
##
## Coefficients:
##                                Estimate Std. Error t value Pr(>|t|)
## (Intercept)                   -1.467050    1.358483  -1.080 0.280622
## active_warps                    0.378140    0.051391   7.358 6.32e-13
## instructions_per_warp          -2.574657    0.191249 -13.462 < 2e-16
## elapsed_cycles_sm              0.658734    0.095802   6.876 1.58e-11
## issued_load.store_instructions -0.475686    0.039218 -12.129 < 2e-16
## active_cycles                  0.071118    0.087112   0.816 0.414606
## multiprocessor_activity         0.035962    0.098475   0.365 0.715106
## achieved_occupancy             0.178256    0.057309   3.110 0.001959
## global_load_transactions_per_request 0.073069    0.043550   1.678 0.093913
## device_memory_read_transactions -0.010928    0.003214  -3.401 0.000718
## system_memory_write_throughput  -0.036917    0.007863  -4.695 3.32e-06
## max_clock_rate                 -0.294987    0.040929  -7.207 1.76e-12
## theoretical_flops              -0.521362    0.020908 -24.936 < 2e-16
##
## (Intercept)
## active_warps                    ***
## instructions_per_warp          ***
## elapsed_cycles_sm              ***
## issued_load.store_instructions ***
## active_cycles
## multiprocessor_activity
## achieved_occupancy             **
## global_load_transactions_per_request .
## device_memory_read_transactions ***
## system_memory_write_throughput ***
## max_clock_rate                 ***
## theoretical_flops              ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1244 on 587 degrees of freedom
## Multiple R-squared:  0.9523, Adjusted R-squared:  0.9514
## F-statistic: 977.3 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 10"
##

```



```

## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.38501 -0.08780 -0.00025  0.07647  0.32196
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      1.380227   1.347393   1.024 0.306083
## active_warps       0.407100   0.050288   8.095 3.30e-15
## instructions_per_warp -2.902023  0.186963 -15.522 < 2e-16
## elapsed_cycles_sm    0.668178  0.093464   7.149 2.61e-12
## issued_load.store_instructions -0.559094  0.039035 -14.323 < 2e-16
## active_cycles       0.090677  0.084969   1.067 0.286329
## multiprocessor_activity  0.063798  0.096251   0.663 0.507695
## achieved_occupancy    0.213562  0.055874   3.822 0.000146
## global_load_transactions_per_request 0.143583  0.042450   3.382 0.000766
## device_memory_read_transactions -0.004978  0.002174  -2.290 0.022397
## system_memory_write_throughput -0.022993  0.007670  -2.998 0.002835
## max_clock_rate      -0.412367  0.044280  -9.313 < 2e-16
## theoretical_flops    -0.518011  0.020570 -25.183 < 2e-16
##
## (Intercept)
## active_warps      ***
## instructions_per_warp ***
## elapsed_cycles_sm ***
## issued_load.store_instructions ***
## active_cycles
## multiprocessor_activity
## achieved_occupancy ***
## global_load_transactions_per_request ***
## device_memory_read_transactions *
## system_memory_write_throughput **
## max_clock_rate    ***
## theoretical_flops ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1215 on 587 degrees of freedom
## Multiple R-squared:  0.9521, Adjusted R-squared:  0.9511
## F-statistic: 971.5 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= Quadro threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.39804 -0.07364 -0.01999  0.07341  0.34099
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)

```

```

## (Intercept)                -0.428166    1.306952   -0.328    0.74333
## active_warps                0.392944    0.049033    8.014 6.02e-15
## instructions_per_warp       -2.855684    0.180824  -15.793 < 2e-16
## elapsed_cycles_sm           0.698722    0.091525    7.634 9.26e-14
## issued_load.store_instructions -0.542019    0.036516  -14.844 < 2e-16
## active_cycles               0.050345    0.083124    0.606 0.54498
## multiprocessor_activity      0.102163    0.094433    1.082 0.27976
## achieved_occupancy          0.217019    0.054679    3.969 8.11e-05
## global_load_transactions_per_request 0.132834    0.041454    3.204 0.00143
## device_memory_read_transactions -0.005552    0.002124   -2.613 0.00919
## system_memory_write_throughput -0.032330    0.007454   -4.338 1.70e-05
## max_clock_rate              -0.195007    0.038487   -5.067 5.43e-07
## theoretical_flops           -0.504298    0.020100  -25.090 < 2e-16
##
## (Intercept)
## active_warps                ***
## instructions_per_warp       ***
## elapsed_cycles_sm           ***
## issued_load.store_instructions ***
## active_cycles
## multiprocessor_activity
## achieved_occupancy          ***
## global_load_transactions_per_request **
## device_memory_read_transactions **
## system_memory_write_throughput ***
## max_clock_rate              ***
## theoretical_flops           ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1188 on 587 degrees of freedom
## Multiple R-squared:  0.9512, Adjusted R-squared:  0.9502
## F-statistic: 953.5 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-750 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.35635 -0.08024 -0.01812  0.09038  0.32070
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    5.765492   1.333417   4.324 1.80e-05
## active_warps    0.378453   0.053165   7.119 3.20e-12
## instructions_per_warp -4.067507  0.214060  -19.002 < 2e-16
## elapsed_cycles_sm  0.716654   0.098169   7.300 9.39e-13
## issued_load.store_instructions -0.489471  0.044717  -10.946 < 2e-16
## active_cycles    0.050534   0.088584    0.570 0.568582
## multiprocessor_activity 0.052293   0.100318    0.521 0.602373
## achieved_occupancy 0.165869   0.059439    2.791 0.005432
## global_load_transactions_per_request 0.134280  0.035659    3.766 0.000183

```

```

## device_memory_read_transactions      -0.004189    0.002874   -1.457  0.145545
## system_memory_write_throughput       -0.017497    0.006480   -2.700  0.007125
## max_clock_rate                       -0.001034    0.051552   -0.020  0.984011
## theoretical_flops                    -0.116967    0.052848   -2.213  0.027262
##
## (Intercept)                          ***
## active_warps                          ***
## instructions_per_warp                  ***
## elapsed_cycles_sm                     ***
## issued_load.store_instructions         ***
## active_cycles
## multiprocessor_activity
## achieved_occupancy                    **
## global_load_transactions_per_request  ***
## device_memory_read_transactions
## system_memory_write_throughput        **
## max_clock_rate
## theoretical_flops                      *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1176 on 587 degrees of freedom
## Multiple R-squared:  0.9494, Adjusted R-squared:  0.9483
## F-statistic: 917.3 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-980 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.27379 -0.04366 -0.01083  0.05688  0.20944
##
## Coefficients:
##
##              Estimate Std. Error t value
## (Intercept)    -17.330258    1.048468  -16.529
## active_warps      0.400061    0.044214   9.048
## instructions_per_warp -1.475568    0.121088 -12.186
## elapsed_cycles_sm   0.883998    0.081199  10.887
## issued_load.store_instructions -0.131060    0.029940  -4.377
## active_cycles    -0.094097    0.074344  -1.266
## multiprocessor_activity -0.165908    0.080747  -2.055
## achieved_occupancy -0.250584    0.049719  -5.040
## global_load_transactions_per_request  0.050406    0.024024   2.098
## device_memory_read_transactions -0.003067    0.001419  -2.162
## system_memory_write_throughput -0.009063    0.004336  -2.090
## max_clock_rate      0.256416    0.031042   8.260
## theoretical_flops   -0.768399    0.015737 -48.828
##
##              Pr(>|t|)
## (Intercept)    < 2e-16 ***
## active_warps    < 2e-16 ***
## instructions_per_warp < 2e-16 ***
## elapsed_cycles_sm  < 2e-16 ***

```

```

## issued_load.store_instructions      1.42e-05 ***
## active_cycles                      0.2061
## multiprocessor_activity             0.0404 *
## achieved_occupancy                 6.21e-07 ***
## global_load_transactions_per_request 0.0363 *
## device_memory_read_transactions     0.0311 *
## system_memory_write_throughput      0.0370 *
## max_clock_rate                     9.67e-16 ***
## theoretical_flops                   < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07877 on 587 degrees of freedom
## Multiple R-squared:  0.9744, Adjusted R-squared:  0.9738
## F-statistic: 1860 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-970 threshCorr= 0.5 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.277251 -0.044746 -0.007759  0.058571  0.200091
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -9.514853   0.859535  -11.070 < 2e-16
## active_warps      0.348975   0.039263   8.888 < 2e-16
## instructions_per_warp -2.697864   0.106935 -25.229 < 2e-16
## elapsed_cycles_sm   0.981570   0.072744  13.493 < 2e-16
## issued_load.store_instructions -0.073934   0.030482  -2.426  0.0156
## active_cycles    -0.171983   0.067423  -2.551  0.0110
## multiprocessor_activity -0.108857   0.075162  -1.448  0.1481
## achieved_occupancy -0.247147   0.045483  -5.434 8.09e-08
## global_load_transactions_per_request 0.033016   0.023427   1.409  0.1593
## device_memory_read_transactions -0.003046   0.001374  -2.217  0.0270
## system_memory_write_throughput -0.010477   0.004213  -2.487  0.0132
## max_clock_rate     0.170626   0.028445   5.998 3.49e-09
## theoretical_flops  -1.094518   0.022996 -47.596 < 2e-16
##
## (Intercept)          ***
## active_warps          ***
## instructions_per_warp ***
## elapsed_cycles_sm     ***
## issued_load.store_instructions *
## active_cycles          *
## multiprocessor_activity
## achieved_occupancy    ***
## global_load_transactions_per_request
## device_memory_read_transactions *
## system_memory_write_throughput *
## max_clock_rate        ***
## theoretical_flops      ***

```

```

## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.07662 on 587 degrees of freedom
## Multiple R-squared:  0.9767, Adjusted R-squared:  0.9763
## F-statistic: 2053 on 12 and 587 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-680 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.34468 -0.10317 -0.00945  0.10608  0.36191
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -17.762376    1.112861  -15.961 < 2e-16 ***
## active_warps      0.106859    0.009401   11.367 < 2e-16 ***
## instructions_per_warp  0.974574    0.256685    3.797 0.000162 ***
## elapsed_cycles_sm    0.742961    0.032343   22.972 < 2e-16 ***
## multiprocessor_activity -0.124493    0.025885   -4.810 1.92e-06 ***
## system_memory_write_throughput -0.037337    0.008223   -4.541 6.80e-06 ***
## max_clock_rate    -1.467971    0.129495  -11.336 < 2e-16 ***
## theoretical_flops   -0.721668    0.019457  -37.091 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1315 on 592 degrees of freedom
## Multiple R-squared:  0.9407, Adjusted R-squared:  0.94
## F-statistic: 1342 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= Tesla-K40 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.40793 -0.11108 -0.00249  0.11562  0.31596
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -8.238787    0.663494  -12.417 < 2e-16 ***
## active_warps      0.137802    0.009792   14.073 < 2e-16 ***
## instructions_per_warp -1.645225    0.084996  -19.357 < 2e-16 ***
## elapsed_cycles_sm    0.621635    0.029437   21.117 < 2e-16 ***
## multiprocessor_activity -0.144906    0.028113   -5.154 3.47e-07 ***
## system_memory_write_throughput -0.048396    0.008799   -5.500 5.65e-08 ***
## max_clock_rate    -0.181225    0.044949   -4.032 6.26e-05 ***
## theoretical_flops   -0.658373    0.018979  -34.690 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

```

##
## Residual standard error: 0.1403 on 592 degrees of freedom
## Multiple R-squared:  0.9389, Adjusted R-squared:  0.9382
## F-statistic: 1299 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= Tesla-K20 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.40272 -0.11375  0.00011  0.11419  0.32463
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -8.304068   0.673132  -12.336 < 2e-16 ***
## active_warps    0.137095   0.009598   14.283 < 2e-16 ***
## instructions_per_warp -1.592445   0.087283  -18.245 < 2e-16 ***
## elapsed_cycles_sm    0.633009   0.029773   21.261 < 2e-16 ***
## multiprocessor_activity -0.150763   0.027587   -5.465 6.83e-08 ***
## system_memory_write_throughput -0.038621   0.008863   -4.357 1.55e-05 ***
## max_clock_rate   -0.241851   0.049833   -4.853 1.56e-06 ***
## theoretical_flops  -0.680536   0.019247  -35.358 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.142 on 592 degrees of freedom
## Multiple R-squared:  0.9339, Adjusted R-squared:  0.9331
## F-statistic: 1195 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= Quadro threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.41927 -0.10478 -0.01219  0.12016  0.31764
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -9.569074   0.664929  -14.391 < 2e-16 ***
## active_warps    0.131281   0.009311   14.099 < 2e-16 ***
## instructions_per_warp -1.603382   0.085082  -18.845 < 2e-16 ***
## elapsed_cycles_sm    0.630325   0.029119   21.646 < 2e-16 ***
## multiprocessor_activity -0.130520   0.026623   -4.903 1.22e-06 ***
## system_memory_write_throughput -0.044268   0.008738   -5.066 5.43e-07 ***
## max_clock_rate   -0.045137   0.043852   -1.029  0.304
## theoretical_flops  -0.670175   0.018909  -35.441 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1403 on 592 degrees of freedom

```

```
## Multiple R-squared:  0.9314, Adjusted R-squared:  0.9306
## F-statistic:  1148 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-750 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.35439 -0.09016 -0.00205  0.10145  0.30749
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      0.171149   0.960878   0.178 0.858692
## active_warps      0.106488   0.008759  12.158 < 2e-16 ***
## instructions_per_warp -3.298196   0.178361 -18.492 < 2e-16 ***
## elapsed_cycles_sm    0.642779   0.033198  19.362 < 2e-16 ***
## multiprocessor_activity -0.114846   0.024457  -4.696 3.3e-06 ***
## system_memory_write_throughput -0.021659   0.007139  -3.034 0.002522 **
## max_clock_rate      0.184498   0.053447   3.452 0.000596 ***
## theoretical_flops    -0.127992   0.058156  -2.201 0.028132 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.13 on 592 degrees of freedom
## Multiple R-squared:  0.9376, Adjusted R-squared:  0.9369
## F-statistic:  1271 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-980 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.27872 -0.04639 -0.00335  0.06617  0.22444
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -19.843196   0.496154 -39.994 < 2e-16 ***
## active_warps     0.032344   0.006222   5.198 2.77e-07 ***
## instructions_per_warp -1.101933   0.052759 -20.886 < 2e-16 ***
## elapsed_cycles_sm    1.069652   0.020646  51.808 < 2e-16 ***
## multiprocessor_activity -0.034727   0.019808  -1.753  0.0801 .
## system_memory_write_throughput -0.010554   0.004622  -2.284  0.0227 *
## max_clock_rate     0.321920   0.028519  11.288 < 2e-16 ***
## theoretical_flops    -0.805737   0.011590 -69.518 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08411 on 592 degrees of freedom
## Multiple R-squared:  0.9705, Adjusted R-squared:  0.9702
## F-statistic:  2785 on 7 and 592 DF,  p-value: < 2.2e-16
```

```
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-970 threshCorr= 0.5 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.283266 -0.047707 -0.003763  0.059384  0.214858
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -9.955456   0.377814  -26.350 < 2e-16 ***
## active_warps     0.037510   0.005758   6.515 1.56e-10 ***
## instructions_per_warp -2.531947  0.054068 -46.829 < 2e-16 ***
## elapsed_cycles_sm   1.059137  0.019503  54.307 < 2e-16 ***
## multiprocessor_activity -0.047540  0.015776  -3.013 0.00269 **
## system_memory_write_throughput -0.011729  0.004440  -2.641 0.00847 **
## max_clock_rate     0.200099  0.026165   7.648 8.32e-14 ***
## theoretical_flops   -1.119166  0.015543 -72.003 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.08089 on 592 degrees of freedom
## Multiple R-squared:  0.9738, Adjusted R-squared:  0.9735
## F-statistic: 3149 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-680 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.32148 -0.10515 -0.02225  0.08195  0.55618
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -1.995e+03  3.576e+03  -0.558
## registers.per.thread  6.389e+02  1.915e+03   0.334
## inst_issued2    -7.407e-01  1.435e-01  -5.160
## active_warps     7.875e-01  3.569e-02  22.064
## multiprocessor_activity -2.626e-01  2.708e-02  -9.696
## shared_memory_efficiency -5.964e+02  1.366e+03  -0.437
## instructions_per_warp   1.628e+02  1.987e+01   8.197
## shared_memory_store_transactions_per_request      NA           NA      NA
## system_memory_write_throughput -5.181e-02  9.009e-03  -5.751
## issued_load.store_instructions  1.021e-01  1.554e-01   0.657
## texture_function_unit_utilization      NA           NA      NA
## max_clock_rate     2.601e+00  3.293e-01   7.899
## theoretical_flops   -3.997e-01  2.680e-02 -14.915
##
##              Pr(>|t|)
## (Intercept)      0.577
## registers.per.thread  0.739
```



```

## inst_issued2                3.38e-07 ***
## active_warps                < 2e-16 ***
## multiprocessor_activity     < 2e-16 ***
## shared_memory_efficiency    0.662
## instructions_per_warp       1.55e-15 ***
## shared_memory_store_transactions_per_request NA
## system_memory_write_throughput 1.42e-08 ***
## issued_load.store_instructions 0.512
## texture_function_unit_utilization NA
## max_clock_rate              1.39e-14 ***
## theoretical_flops           < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1436 on 589 degrees of freedom
## Multiple R-squared:  0.9297, Adjusted R-squared:  0.9285
## F-statistic: 779.3 on 10 and 589 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= needle_cuda_shared_2 GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.37283 -0.12610 -0.02153  0.09730  0.49328
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -2.162e+03  4.219e+03  -0.513
## registers.per.thread    1.136e+03  2.259e+03   0.503
## inst_issued2     -4.324e-02  1.454e-01  -0.297
## active_warps      7.056e-01  4.171e-02  16.917
## multiprocessor_activity -3.133e-01  3.288e-02  -9.529
## shared_memory_efficiency -8.183e+02  1.611e+03  -0.508
## instructions_per_warp    6.353e+00  1.152e+01   0.551
## shared_memory_store_transactions_per_request NA          NA          NA
## system_memory_write_throughput -6.673e-02  1.055e-02  -6.326
## issued_load.store_instructions -4.689e-01  1.602e-01  -2.928
## texture_function_unit_utilization NA          NA          NA
## max_clock_rate     -3.550e-01  6.985e-02  -5.082
## theoretical_flops    -2.407e-01  2.220e-02 -10.846
##
##              Pr(>|t|)
## (Intercept)    0.60849
## registers.per.thread    0.61524
## inst_issued2    0.76628
## active_warps    < 2e-16 ***
## multiprocessor_activity < 2e-16 ***
## shared_memory_efficiency 0.61168
## instructions_per_warp    0.58159
## shared_memory_store_transactions_per_request NA
## system_memory_write_throughput 4.99e-10 ***

```

```

## issued_load.store_instructions          0.00355 **
## texture_function_unit_utilization      NA
## max_clock_rate                         5.02e-07 ***
## theoretical_flops                       < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1694 on 589 degrees of freedom
## Multiple R-squared:  0.9113, Adjusted R-squared:  0.9098
## F-statistic: 605.5 on 10 and 589 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= needle_cuda_shared_2 GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.39139 -0.13230  0.00065  0.11305  0.46636
##
## Coefficients: (2 not defined because of singularities)
##
##              Estimate Std. Error t value
## (Intercept)    -1.004e+03  4.022e+03  -0.250
## registers.per.thread    5.300e+02  2.153e+03   0.246
## inst_issued2    -2.402e+00  3.243e-01  -7.405
## active_warps      8.399e-01  4.179e-02  20.099
## multiprocessor_activity -1.811e-01  3.428e-02  -5.282
## shared_memory_efficiency -3.831e+02  1.536e+03  -0.250
## instructions_per_warp    1.480e+00  1.058e+01   0.140
## shared_memory_store_transactions_per_request      NA         NA      NA
## system_memory_write_throughput -5.726e-02  1.006e-02  -5.693
## issued_load.store_instructions    1.672e+00  3.086e-01   5.417
## texture_function_unit_utilization      NA         NA      NA
## max_clock_rate    -5.340e-01  6.131e-02  -8.708
## theoretical_flops    -1.839e-01  2.199e-02  -8.360
##
##              Pr(>|t|)
## (Intercept)      0.803
## registers.per.thread    0.806
## inst_issued2    4.56e-13 ***
## active_warps      < 2e-16 ***
## multiprocessor_activity 1.80e-07 ***
## shared_memory_efficiency    0.803
## instructions_per_warp      0.889
## shared_memory_store_transactions_per_request      NA
## system_memory_write_throughput 1.97e-08 ***
## issued_load.store_instructions 8.82e-08 ***
## texture_function_unit_utilization      NA
## max_clock_rate      < 2e-16 ***
## theoretical_flops    4.52e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```

```

## Residual standard error: 0.1614 on 589 degrees of freedom
## Multiple R-squared:  0.9151, Adjusted R-squared:  0.9137
## F-statistic: 635.1 on 10 and 589 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= needle_cuda_shared_2  GPU= Quadro  threshCorr= 0.65  numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.34350 -0.12149 -0.02960  0.09919  0.49583
##
## Coefficients: (2 not defined because of singularities)
##
##              Estimate Std. Error t value
## (Intercept)      -1.888e+03  4.083e+03  -0.462
## registers.per.thread      9.699e+02  2.186e+03   0.444
## inst_issued2      -4.736e-01  1.321e-01  -3.585
## active_warps       7.319e-01  3.977e-02  18.406
## multiprocessor_activity  -2.819e-01  3.004e-02  -9.385
## shared_memory_efficiency -7.060e+02  1.559e+03  -0.453
## instructions_per_warp    1.360e+01  1.075e+01   1.265
## shared_memory_store_transactions_per_request      NA      NA      NA
## system_memory_write_throughput  -6.546e-02  1.017e-02  -6.435
## issued_load.store_instructions  -8.446e-02  1.452e-01  -0.582
## texture_function_unit_utilization      NA      NA      NA
## max_clock_rate      -1.713e-01  6.186e-02  -2.770
## theoretical_flops      -2.340e-01  2.072e-02 -11.295
##
##              Pr(>|t|)
## (Intercept)    0.643984
## registers.per.thread    0.657434
## inst_issued2    0.000365 ***
## active_warps    < 2e-16 ***
## multiprocessor_activity    < 2e-16 ***
## shared_memory_efficiency    0.650830
## instructions_per_warp    0.206211
## shared_memory_store_transactions_per_request      NA
## system_memory_write_throughput    2.57e-10 ***
## issued_load.store_instructions    0.560930
## texture_function_unit_utilization      NA
## max_clock_rate    0.005787 **
## theoretical_flops    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1639 on 589 degrees of freedom
## Multiple R-squared:  0.9068, Adjusted R-squared:  0.9053
## F-statistic: 573.4 on 10 and 589 DF,  p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= needle_cuda_shared_2  GPU= GTX-750  threshCorr= 0.65  numberFeatures= 10"

```

```
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.33435 -0.10875 -0.00895  0.08445  0.55446
##
## Coefficients: (2 not defined because of singularities)
##              Estimate Std. Error t value
## (Intercept)    -4.599e+02  3.897e+03  -0.118
## registers.per.thread    1.504e+02  2.087e+03   0.072
## inst_issued2    -1.545e-01  1.374e-01  -1.124
## active_warps      5.344e-01  4.997e-02  10.696
## multiprocessor_activity -2.787e-01  2.808e-02  -9.924
## shared_memory_efficiency -1.387e+02  1.488e+03  -0.093
## instructions_per_warp    3.571e+01  1.372e+01   2.603
## shared_memory_store_transactions_per_request      NA      NA      NA
## system_memory_write_throughput -3.907e-02  8.528e-03  -4.582
## issued_load.store_instructions -2.058e-01  1.555e-01  -1.323
## texture_function_unit_utilization      NA      NA      NA
## max_clock_rate    -3.105e-01  8.286e-02  -3.747
## theoretical_flops    -4.311e-01  1.172e-01  -3.678
##
##              Pr(>|t|)
## (Intercept)    0.906100
## registers.per.thread    0.942580
## inst_issued2    0.261295
## active_warps      < 2e-16 ***
## multiprocessor_activity < 2e-16 ***
## shared_memory_efficiency    0.925755
## instructions_per_warp    0.009471 **
## shared_memory_store_transactions_per_request      NA
## system_memory_write_throughput    5.64e-06 ***
## issued_load.store_instructions    0.186384
## texture_function_unit_utilization      NA
## max_clock_rate    0.000196 ***
## theoretical_flops    0.000256 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1563 on 589 degrees of freedom
## Multiple R-squared:  0.9103, Adjusted R-squared:  0.9088
## F-statistic: 597.8 on 10 and 589 DF,  p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-980 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.34223 -0.12882 -0.02849  0.10662  0.49779
```

```
##
## Coefficients: (2 not defined because of singularities)
##               Estimate Std. Error t value
## (Intercept)    -2.630e+03  4.273e+03  -0.615
## registers.per.thread    1.177e+03  2.286e+03   0.515
## inst_issued2     2.826e-02  1.496e-01   0.189
## active_warps      8.814e-01  4.455e-02  19.786
## multiprocessor_activity -2.923e-01  3.885e-02  -7.525
## shared_memory_efficiency -9.147e+02  1.629e+03  -0.561
## instructions_per_warp    8.795e+01  8.432e+01   1.043
## shared_memory_store_transactions_per_request      NA      NA      NA
## system_memory_write_throughput -4.791e-02  9.300e-03  -5.152
## issued_load.store_instructions -7.510e-01  1.625e-01  -4.621
## texture_function_unit_utilization      NA      NA      NA
## max_clock_rate    -4.510e-01  8.979e-02  -5.023
## theoretical_flops    -3.353e-01  1.283e-01  -2.614
##               Pr(>|t|)
## (Intercept)      0.53855
## registers.per.thread    0.60690
## inst_issued2      0.85021
## active_warps      < 2e-16 ***
## multiprocessor_activity 1.99e-13 ***
## shared_memory_efficiency 0.57473
## instructions_per_warp    0.29733
## shared_memory_store_transactions_per_request      NA
## system_memory_write_throughput 3.52e-07 ***
## issued_load.store_instructions 4.70e-06 ***
## texture_function_unit_utilization      NA
## max_clock_rate      6.77e-07 ***
## theoretical_flops    0.00917 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1713 on 589 degrees of freedom
## Multiple R-squared:  0.8784, Adjusted R-squared:  0.8764
## F-statistic: 425.7 on 10 and 589 DF,  p-value: < 2.2e-16
##
## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-970 threshCorr= 0.65 numberFeatures= 10"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.3428 -0.1340 -0.0272  0.1085  0.5044
##
## Coefficients: (4 not defined because of singularities)
##               Estimate Std. Error t value
## (Intercept)      0.371482   0.373355   0.995
## registers.per.thread -3.693188   0.173494 -21.287
## inst_issued2     -0.065230   0.125464  -0.520
## active_warps      0.865608   0.045496  19.026
```

```

## multiprocessor_activity          -0.283251    0.032126   -8.817
## shared_memory_efficiency          NA           NA        NA
## instructions_per_warp              NA           NA        NA
## shared_memory_store_transactions_per_request NA           NA        NA
## system_memory_write_throughput    -0.048582    0.009405   -5.166
## issued_load.store_instructions    -0.640549    0.142168   -4.506
## texture_function_unit_utilization NA           NA        NA
## max_clock_rate                    -0.374643    0.062043   -6.038
## theoretical_flops                  -0.203496    0.022493   -9.047
##                                  Pr(>|t|)
## (Intercept)                       0.320
## registers.per.thread               < 2e-16 ***
## inst_issued2                      0.603
## active_warps                      < 2e-16 ***
## multiprocessor_activity            < 2e-16 ***
## shared_memory_efficiency           NA
## instructions_per_warp              NA
## shared_memory_store_transactions_per_request NA
## system_memory_write_throughput     3.28e-07 ***
## issued_load.store_instructions     7.98e-06 ***
## texture_function_unit_utilization NA
## max_clock_rate                    2.75e-09 ***
## theoretical_flops                  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1732 on 591 degrees of freedom
## Multiple R-squared:  0.8802, Adjusted R-squared:  0.8786
## F-statistic: 543 on 8 and 591 DF, p-value: < 2.2e-16

## Warning in predict.lm(fit, testData): prediction from a rank-deficient fit
## may be misleading

## [1] "kernel= needle_cuda_shared_2 GPU= GTX-680 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.30936 -0.10911 -0.01712  0.08354  0.51295
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  11.637267   0.951149  12.235 < 2e-16 ***
## instructions_per_warp -4.128320   0.284003 -14.536 < 2e-16 ***
## issued_load.store_instructions -0.703695   0.044498 -15.814 < 2e-16 ***
## active_warps    0.842378   0.036990  22.773 < 2e-16 ***
## multiprocessor_activity -0.238063   0.028362  -8.394 3.47e-16 ***
## system_memory_write_throughput -0.048327   0.009442  -5.118 4.18e-07 ***
## max_clock_rate    0.121895   0.140554   0.867  0.386
## theoretical_flops -0.206173   0.014722 -14.004 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```

```

## Residual standard error: 0.1517 on 592 degrees of freedom
## Multiple R-squared:  0.9212, Adjusted R-squared:  0.9202
## F-statistic: 988.3 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= Tesla-K40 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.36937 -0.12548 -0.02272  0.09762  0.49165
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      7.24883    0.59547  12.173 < 2e-16 ***
## instructions_per_warp -2.89098    0.11476 -25.192 < 2e-16 ***
## issued_load.store_instructions -0.52561    0.04754 -11.055 < 2e-16 ***
## active_warps      0.71614    0.03963  18.071 < 2e-16 ***
## multiprocessor_activity -0.30565    0.03176  -9.622 < 2e-16 ***
## system_memory_write_throughput -0.06669    0.01052  -6.337 4.64e-10 ***
## max_clock_rate    -0.38085    0.05470  -6.962 8.92e-12 ***
## theoretical_flops  -0.22784    0.01645 -13.854 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1691 on 592 degrees of freedom
## Multiple R-squared:  0.9112, Adjusted R-squared:  0.9101
## F-statistic: 867.8 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= Tesla-K20 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.33970 -0.13163 -0.01427  0.09919  0.48095
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      8.25605    0.60967  13.542 < 2e-16 ***
## instructions_per_warp -2.96133    0.11546 -25.648 < 2e-16 ***
## issued_load.store_instructions -0.59332    0.04829 -12.286 < 2e-16 ***
## active_warps      0.76758    0.04008  19.151 < 2e-16 ***
## multiprocessor_activity -0.28647    0.03103  -9.231 < 2e-16 ***
## system_memory_write_throughput -0.05216    0.01047  -4.984 8.19e-07 ***
## max_clock_rate    -0.47891    0.06043  -7.925 1.14e-14 ***
## theoretical_flops  -0.22623    0.01647 -13.735 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1684 on 592 degrees of freedom
## Multiple R-squared:  0.9072, Adjusted R-squared:  0.9061

```

```

## F-statistic: 826.3 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2  GPU= Quadro  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.34053 -0.12268 -0.02791  0.09654  0.51493
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      6.81756    0.58280   11.698 < 2e-16 ***
## instructions_per_warp -2.93547    0.11155  -26.315 < 2e-16 ***
## issued_load.store_instructions -0.59085    0.04520  -13.073 < 2e-16 ***
## active_warps      0.76172    0.03819   19.946 < 2e-16 ***
## multiprocessor_activity -0.27239    0.02944   -9.251 < 2e-16 ***
## system_memory_write_throughput -0.06164    0.01021   -6.035 2.8e-09 ***
## max_clock_rate     -0.29518    0.05237   -5.636 2.7e-08 ***
## theoretical_flops   -0.21692    0.01589  -13.653 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1654 on 592 degrees of freedom
## Multiple R-squared:  0.9046, Adjusted R-squared:  0.9035
## F-statistic: 802.1 on 7 and 592 DF,  p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2  GPU= GTX-750  threshCorr= 0.65  numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.32263 -0.11461 -0.00444  0.08864  0.55124
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      7.427195    1.132770   6.557 1.20e-10 ***
## instructions_per_warp -2.904903    0.214518  -13.542 < 2e-16 ***
## issued_load.store_instructions -0.433029    0.052729   -8.212 1.37e-15 ***
## active_warps      0.599301    0.046390   12.919 < 2e-16 ***
## multiprocessor_activity -0.260937    0.027641   -9.440 < 2e-16 ***
## system_memory_write_throughput -0.037433    0.008569   -4.368 1.48e-05 ***
## max_clock_rate     -0.338614    0.062622   -5.407 9.30e-08 ***
## theoretical_flops   -0.271833    0.069784   -3.895 0.000109 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1575 on 592 degrees of freedom
## Multiple R-squared:  0.9085, Adjusted R-squared:  0.9075
## F-statistic: 840.2 on 7 and 592 DF,  p-value: < 2.2e-16
##

```



```
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-980 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.33980 -0.12919 -0.03016  0.10257  0.50304
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      9.034754   0.655194  13.789 < 2e-16 ***
## instructions_per_warp -3.206707   0.118436 -27.075 < 2e-16 ***
## issued_load.store_instructions -0.730009   0.051638 -14.137 < 2e-16 ***
## active_warps       0.887260   0.043735  20.287 < 2e-16 ***
## multiprocessor_activity -0.287519   0.038634  -7.442 3.51e-13 ***
## system_memory_write_throughput -0.047182   0.009241  -5.106 4.45e-07 ***
## max_clock_rate     -0.396354   0.057715  -6.867 1.66e-11 ***
## theoretical_flops   -0.197325   0.016878 -11.692 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1711 on 592 degrees of freedom
## Multiple R-squared:  0.8781, Adjusted R-squared:  0.8766
## F-statistic: 609.1 on 7 and 592 DF, p-value: < 2.2e-16
##
## [1] "kernel= needle_cuda_shared_2 GPU= GTX-970 threshCorr= 0.65 numberFeatures= 5"
##
## Call:
## lm(formula = trainingDuration ~ ., data = trainingData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.34262 -0.13236 -0.02664  0.10744  0.50327
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      8.879504   0.633915  14.007 < 2e-16 ***
## instructions_per_warp -3.189094   0.124400 -25.636 < 2e-16 ***
## issued_load.store_instructions -0.709189   0.052711 -13.454 < 2e-16 ***
## active_warps       0.869237   0.044930  19.346 < 2e-16 ***
## multiprocessor_activity -0.283502   0.032103  -8.831 < 2e-16 ***
## system_memory_write_throughput -0.048109   0.009355  -5.143 3.69e-07 ***
## max_clock_rate     -0.388072   0.056376  -6.884 1.49e-11 ***
## theoretical_flops   -0.202755   0.022434  -9.038 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1731 on 592 degrees of freedom
## Multiple R-squared:  0.8802, Adjusted R-squared:  0.8788
## F-statistic: 621.3 on 7 and 592 DF, p-value: < 2.2e-16
```