

```

> library(tidyverse)
> library(caret)
> library(rpart)
> n <- 1000
> sigma <- 0.25
> set.seed(1, sample.kind = "Rounding")
Warning message:
In set.seed(1, sample.kind = "Rounding") :
  non-uniform 'Rounding' sampler used
> x <- rnorm(n, 0, 1)
> y <- 0.75 * x + rnorm(n, 0, sigma)
> dat <- data.frame(x = x, y = y)
>
> dim(dat)
[1] 1000    2
> head(dat)
      x      y
1 -0.6264538 -0.1860991
2  0.1836433  0.4157155
3 -0.8356286 -0.8444159
4  1.5952808  1.2491435
5  0.3295078  0.2644797
6 -0.8204684 -1.0310135
>
>
> fit <- rpart(y ~ ., data = dat)
> fit
n= 1000

node), split, n, deviance, yval
  * denotes terminal node

1) root 1000 671.974600 -0.01280158
 2) x< 0.04356324 530 158.731500 -0.59370820
   4) x< -0.9170643 197 41.121350 -1.10782600
     8) x< -1.562347 64 8.224372 -1.60052900 *
     9) x>=-1.562347 133 9.884371 -0.87073520 *
   5) x>=-0.9170643 333 34.735340 -0.28956060
     10) x< -0.2780109 208 16.520930 -0.41776820 *
     11) x>=-0.2780109 125 9.106377 -0.07622330 *
 3) x>=0.04356324 470 132.711600 0.64226330
   6) x< 1.164213 347 37.218310 0.41132280
     12) x< 0.5688358 179 11.962510 0.22599900 *
     13) x>=0.5688358 168 12.557800 0.60878090 *
   7) x>=1.164213 123 24.776510 1.29377800
     14) x< 1.975603 94 9.455625 1.13129800 *
     15) x>=1.975603 29 4.795537 1.82043900 *
>
>
> plot(fit)
> text(fit)
>
>
> dat %>%
+ mutate(y_hat = predict(fit)) %>%
+ ggplot() +
+ geom_point(aes(x, y)) +
+ geom_step(aes(x, y_hat), col=2)
>
>
> library(randomForest)
randomForest 4.6-14
Type rfNews() to see new features/changes/bug fixes.

Attaching package: 'randomForest'

```

The following object is masked from 'package:dplyr':

**combine**

The following object is masked from 'package:ggplot2':

**margin**

```
> fit <- randomForest(y ~ x, data = dat)
```

```
> fit
```

Call:

```
randomForest(formula = y ~ x, data = dat)
```

```
  Type of random forest: regression
```

```
    Number of trees: 500
```

```
No. of variables tried at each split: 1
```

```
  Mean of squared residuals: 0.09341289
```

```
    % Var explained: 86.1
```

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```
> plot(fit)
```

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```
> fit <- randomForest(y ~ x, data = dat, nodesize = 50, maxnodes = 25)
```

```
> plot(fit)
```

```
>
```