

### Summary of the Random Forest Model

Number of observations used to build the model: 4106

Call: randomForest(formula = activity ~ ., data = crs\$dataset[crs\$sample, c(crs\$input, crs\$target)], ntree = 500, mtry = 23, importance = TRUE)

Type of random forest: classification

Number of trees: 500

No. of variables tried at each split: 23

OOB estimate of error rate: 2.34%

Confusion matrix:							
	laying	sitting	standing	walk	walkdown	walkup	class.error
laying	750	1	0	0	0	0	0.001331558
sitting	0	691	24	0	0	1	0.034916201
standing	0	35	743	0	0	0	0.044987147
walk	0	0	0	645	8	7	0.022727273
walkdown	0	0	0	6	560	4	0.01754386
walkup	0	0	0	2	8	621	0.015847861

Error matrix for the Random Forest model on Samsung Data [validate] (counts):

	Predicted					
Actual	laying	sitting	standing	walk	walkdown	walkup
laying	182	0	0	0	0	0
sitting	0	163	3	0	0	0
standing	0	5	145	0	0	0
walk	0	0	0	158	0	0
walkdown	0	0	0	0	107	0
walkup	0	0	0	0	0	117

Error matrix for the Random Forest model on Samsung Data [preliminary test] (counts):

	Predicted					
Actual	laying	sitting	standing	walk	walkdown	walkup
laying	181	0	0	0	0	0
sitting	0	136	4	0	0	0
standing	0	5	158	0	0	0
walk	0	0	0	174	2	3
walkdown	0	0	0	0	107	2
walkup	0	0	0	0	2	107

Error matrix for the Random Forest model on Samsung Data [preliminary test] (%):

	Predicted					
Actual	laying	sitting	standing	walk	walkdown	walkup
laying	21	0	0	0	0	0
sitting	0	15	0	0	0	0
standing	0	1	18	0	0	0
walk	0	0	0	20	0	0
walkdown	0	0	0	0	12	0
walkup	0	0	0	0	0	12

Error matrix for the Random Forest model on Samsung Data [test set: ID 27 - 30] (counts):

	Predicted					
Actual	laying	sitting	standing	walk	walkdown	walkup
laying	293	0	0	0	0	0
sitting	0	226	38	0	0	0
standing	0	16	267	0	0	0
walk	0	0	0	228	0	1
walkdown	0	0	0	2	194	4
walkup	0	0	0	1	1	214

Error matrix for the Random Forest model on Samsung Data [test set: ID 27 - 30] (%):

	Predicted					
Actual	laying	sitting	standing	walk	walkdown	walkup
laying	20	0	0	0	0	0
sitting	0	15	3	0	0	0
standing	0	1	18	0	0	0
walk	0	0	0	15	0	0
walkdown	0	0	0	0	13	0
walkup	0	0	0	0	0	14