

# Supervised Machine Learning, Fall 2018

Schedule is updated dynamically during the semester

	DATE	TOPIC	READING	OUT	DUE
0		Background	CB 1-2		
1	Fri, Sep 7	Statistical learning; k-NN regression, one-variable linear regression, least squares, regression vs correlation	JW 2.1;3.1 HT 2.1-2.4, 2.6, 3.2-3.2.2	Hw1 out	
2	Tue, Sep 11	Gaussian one-variable regression: maximum likelihood, gradient descent, measures of associations	CB 3.1.1-3.1.2 RW Ch 2, 5.1, 6.3		
3	Fri, Sep 14	Multi-variable regression: categorical predictors, unequal variance, robust regression	JW 3.2-3.3		
4	Tue, Sep 18	Overfitting, bias/variance tradeoff, variable selection, cross-validation	JW 5.1, 6.1, HT 3.3, 7.2-7.3, 7.10, CB 3.2	Hw2 out	Hw1 due
5	Fri, Sep 21	Regression in high dimensions: curse of dimensionality, regularization	JW 6.1-6.2, HT 3.4.1-3.4.3, CB 3.1.4		

6	Tue, Sep 25	Regression in high dimensions continued			
7	Fri, Sep 28	k-NN, perceptron, logistic regression, multinomial/softmax regression	JW 4.2-4.3, HT 4.2-4.4 CB 2.2, 4.1.7, 4.3		
8	Tue, Oct 2	<i>Guest lecture</i>		Hw3 out	Hw2 due Proj. group due
9	Fri, Oct 5	Bayes learning, MAP estimation, Naive Bayes, mixtures of Gaussians	HT 6.6.3, CB 2.3.9; 2.5.2		
10	Tue, Oct 9	LDA, regularized LDA, diagonal LDA, nearest shrunken centroids	JW 4.4, HT 4.3, 18.2 CB 4.1.1-4.1.6, 4.2		
11	Fri, Oct 12	Bayesian inference for Gaussian models and regularization; information theory	CB 1.6, 2.3.5-2.3.6, 3.3.1		
12	Tue, Oct 16	<i>Exam prep</i>			Hw3 due
13	Fri, Oct 19	<b>Midterm</b>			
14	Tue, Oct 23	Basis expansion, splines, kernels; kernel density estimation	JW 7.1-7.6, HT 5.1-5.5, 6.1-6.3, 6.6, CB 2.5.1		
15	Fri, Oct 26	Support vector machines, convex optimization	JW 9.1-4, HT 4.5, 12.1-12.3.4,		

16	Tue, Oct 30	<b>In-class project pitches</b>		Hw4 out	Proj. pitch due
17	Fri, Nov 2	Classification/regression trees, bagging, random forest	JW 8.1-8.2, HT 9.2, 15.1-15.3		
18	Tue, Nov 6	Boosting, adaBoost; model interpretation	JW 8.2, HT 10.1-10.2		
19	Fri, Nov 9	Neural networks: representation	HT 11.3, CB 5.1-5.2	Hw5 out	Hw4 due
20	Tue, Nov 13	<i>Guest lecture</i>			
21	Fri, Nov 16	Neural networks: training	HT 11.4-11.7 CB 5.3-5.5.5		
22	Tue, Nov 20	Convolutional neural networks	CB 5.5.6		
23	Fri, Nov 23	<i>No class - Thanksgiving</i>			
24	Tue, Nov 27	<i>Exam prep</i>			Hw5 due
25	Fri, Nov 30	<b>Final exam</b>			
26	Tue, Dec 4	<b>Project presentations</b>			
27	Fri, Dec 7	<b>Project presentations</b>			Proj. report due
28	Tue, Dec 11	<i>Finals week</i>			Proj. review due

