









Lecture: Naive Bayes

- ✓ **Video:** Probability and Bayes' Rule  
2 min
- ✓ **Reading:** Probability and Bayes' Rule  
10 min
- ✓ **Video:** Bayes' Rule  
3 min
- ✓ **Reading:** Bayes' Rule  
10 min
- ✓ **Video:** Naive Bayes Introduction  
5 min
- ✓ **Reading:** Naive Bayes Introduction  
10 min
- ✓ **Video:** Laplacian Smoothing  
2 min
- ✓ **Reading:** Laplacian Smoothing  
10 min
- ✓ **Video:** Log Likelihood, Part 1  
5 min
- ✓ **Reading:** Log Likelihood, Part 1  
10 min
- ✓ **Video:** Log Likelihood, Part 2  
1 min
- ✓ **Reading:** Log Likelihood Part 2  
10 min
- ✓ **Video:** Training Naive Bayes  
3 min
- ✓ **Reading:** Training naive Bayes  
10 min
-  **Lab:** Visualizing likelihoods and confidence ellipses  
1h
- ✓ **Video:** Testing Naive Bayes  
4 min
-  **Reading:** Testing naive Bayes  
10 min
-  **Video:** Applications of Naive Bayes  
3 min
-  **Reading:** Applications of Naive Bayes  
10 min
-  **Video:** Naive Bayes Assumptions  
3 min
-  **Reading:** Naive Bayes Assumptions  
10 min
-  **Video:** Error Analysis  
3 min
-  **Reading:** Error Analysis  
10 min

Assignment: Naive Bayes

Testing naïve Bayes

- log-likelihood dictionary  $\lambda(w) = \log \frac{P(w|pos)}{P(w|neg)}$
- $logprior = \log \frac{D_{pos}}{D_{neg}} = 0$
- Tweet: [I, pass, the NLP interview] 🍏

$score = -0.01 + 0.5 - 0.01 + 0 + logprior = 0.48$

$pred = score > 0$

word		$\lambda$
I		-0.01
the		-0.01
happi		0.63
because		0.01
pass		0.5
NLP		0
sad		-0.75
not		-0.75

The example above shows how you can make a prediction given your  $\lambda$  dictionary. In this example the *logprior* is 0 because we have the same amount of positive and negative documents (i.e.  $\log 1 = 0$ ).

Mark as completed

