CS – 344 Guide 8 – Feature Engineering

* Google’s [Machine Learning Crash Course](https://developers.google.com/machine-learning/crash-course)
  + [Representation](https://developers.google.com/machine-learning/crash-course/representation/video-lecture)
    - Terms
      * *Feature vector*
      * *One-hot* vs. *multi-hot* encodings
      * *Binning*
    - What are the qualities of good features?
    - What are the best practices for data *cleansing*?
  + [Feature Crosses](https://developers.google.com/machine-learning/crash-course/feature-crosses/video-lecture)
    - Compare and contrast *synthetic features* vs. *feature crosses*.
    - How are feature crosses useful?
  + [Regularization for Simplicity`](https://developers.google.com/machine-learning/crash-course/regularization-for-simplicity/video-lecture)
    - Terms
      * *Over-fitting*
      * *Lambda*
      * *Early stopping*
    - Compare and contrast *Loss* vs. *structural rick minimization*.
    - Compare and contrast *L0* vs. *L1* vs. *L2* regularization.
* Programming Tools
  + [Keras](https://keras.io/)
    - What is *Keras*?
    - What are its guiding principles?
    - Do the “30 seconds to Keras” exercises.