Capstone Project Ideas

# Bitcoin Price

* 1. Problem to solve: identify factors affecting Bitcoin price (BTC) and make predictions
  2. Target Clients: bitcoin traders; the model should provide a winning chance of 51% or more (given if only consider 10+% ups and downs)
  3. Data
     1. Bitcoin prices & trading volume: <https://www.quandl.com/data/GDAX/USD-BTC-USD-Exchange-Rate>
     2. Google Search volume: <https://trends.google.com/trends/explore?date=2014-12-01%202017-09-25&q=bitcoin>
     3. S&P 500 index: <https://www.quandl.com/data/CHRIS/CME_ES4-E-mini-S-P-500-Futures-Continuous-Contract-4-ES4>
     4. Gold Price: <https://www.quandl.com/data/LBMA/GOLD-Gold-Price-London-Fixing>
     5. Twitter feeds: never used it before, but want to try
     6. Maybe more fundamental data about tech industry
  4. Outline of approach: multi-dimensional regression analysis using the data mentioned above, ideally pulling data directly from internet.
  5. Deliverables: daily/weekly opinion on whether buy/sell a fixed USD amount of bitcoins (e.g. $1000) and set a target sell price and stop-loss price.

# Kaggle Competition: [Zillow Prize: Zillow’s Home Value Prediction](https://www.kaggle.com/c/zillow-prize-1#description)

* 1. Problem to solve: evaluate home property prices based on given data
  2. Target clients: provide 1st time home buyers a fair estimate of the property they are buying/selling
  3. Data ([4 datasets from Kaggle](https://www.kaggle.com/c/zillow-prize-1/data))
     1. properties\_2016.csv - a full list of real estate properties and features in three counties data in 2016
     2. train\_2016.csv - the training set with all the transactions before October 15, 2016
  4. Outline of approach
     1. Regression analysis
     2. The properties data set is huge(600+ MB), I would like to test the features one by one in case of system crash
     3. First time taking Kaggle challenge, hope to get some idea from mentor.
  5. Deliverables:
     1. Kaggle asks challengers to predict 6 time points for all properties : October 2016 (201610), November 2016 (201611), December 2016 (201612), October 2017 (201710), November 2017 (201711), and December 2017 (201712).