



UNIVERSITY OF  
SAN FRANCISCO

# Beer and Data Science 2018!

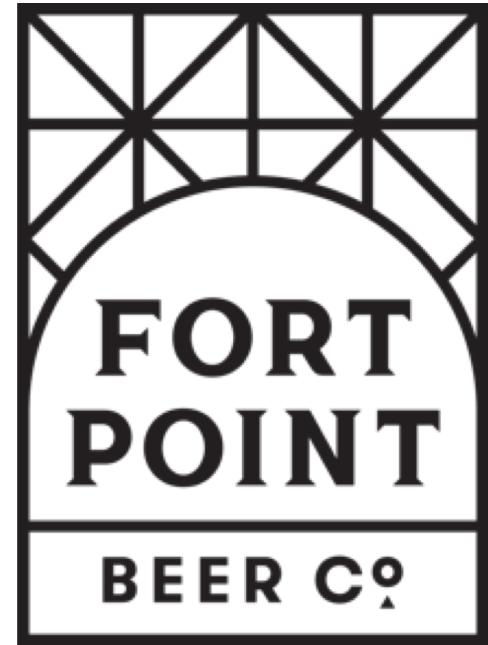


# USF's Data Institute

- Facebook:
  - [www.facebook.com/USFDatalnstitute/](http://www.facebook.com/USFDatalnstitute/)
- Weekly Seminar / MeetUp
- Upcoming Certificates!
  - SQL
  - Deep learning
  - Many more!
- Masters of Data ScienceProgram!
  - Deadline 3/5 – Come talk to me for more information!

## Beer Week Events:

- 2/15 Thursday:
  - Blade Runner 2049 @ Proxy
  - Tap Takeover @ Gotts
  - Beer Week NightLife @ Cal Academy of Sciences
- 2/16 Friday:
  - Fort Point + 4505 Luau @ 4505 Burgers & BBQ
- 2/17
  - Presidio Walk with Fort Point



# Today's Talks

- Student Presentation: Pub Crawl
  - Ryan, Yiqiang, Maise, Kunal, Santhosh and Nishan
- Fort Point's Justin Catalana
- The Lady Tasting Tea

# Before we continue..

- Beer and Data Science go way back!



# Like all good Bay Area stories

- This one begins with an IPO
- In 1886 65% of Guinness was sold to the public for 6 million pounds, which was used to fund more “scientific brewing”

# Hired the best and brightest

- New graduates from Oxford and Cambridge
- “Life was like an extension of college”
- Including Gossett



# Barley

- Important ingredient for Guinness
  - Purchased from a number of small producers
- Using the IPO \$\$\$, set up an experiment center to find “best” (Hypothesis Testing)



# Analyzing The Results

- Central Limit Theorem:  
With large samples you can assume your distribution is normal.
- Barley: Small sample size and unknown variance, so Central Limit Theorem doesn't apply!
- Estimates a distribution and then publishes it.
- Under the name “student t”... t-test!



# Moral of the story

- Having an IPO can be useful
- Beer and Data Science go way Back