



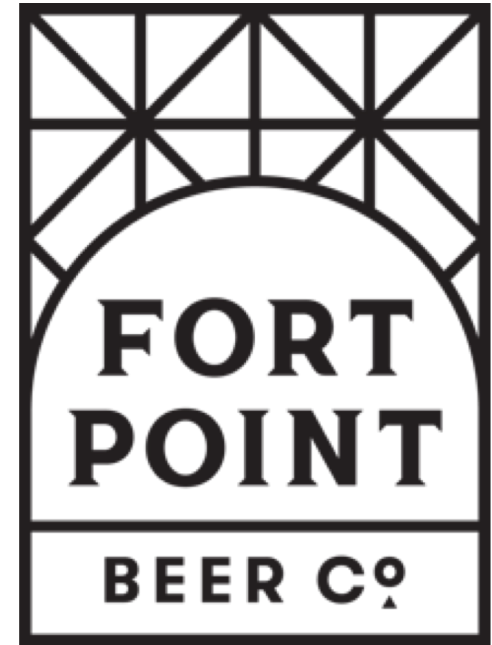
UNIVERSITY OF
SAN FRANCISCO

Beer and Data Science 2018!



USF's Data Institute

- Facebook:
 - www.facebook.com/USFDataInstitute/
- Weekly Seminar / MeetUp
- Upcoming Certificates!
 - SQL
 - Deep learning
 - Many more!
- Masters of Data Science Program!
 - 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