Mark Ibrahim

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SOFTWARE

- Python (SciPy Stack, Flask, object-oriented, PyTest), git, Linux bash, VIM, LaTeX, SQL, HTML, CSS, JavaScript
  familiar: D3.js, Spark, AWS, Java, Neo4j, Elasticsearch
- Co-organizer of Burlington Python User Group
  - 180 members; led beginner Python Workshop

AWARDS

- Gighacks Burlington 2015: "most innovative app"
  civic engagement through video search

- UVM Agile CodeFest 2015: UFeedMe, 1st place winner
  interactive map of free food on campus

EXPERIENCE
New York, NY

Center for Machine Learning at Capital One, *Senior Machine Learning Engineer* Sep 2016 – Present
- Engineering a production serverless architecture to process over 300 million transactions per month in real time
  - System serves predictive notifications for unwanted charges via micro-services
- Building Kafka streaming demo for CEO visualizing sentiment of customer conversations with Eno chat bot

Insight Data Science, *Data Engineering Fellow (2016) & Technical Advisor* Sep 2017 – Present
- Developed a graph-based knowledge search engine (knowledgesearch.us) powered by Wikipedia
  - Used a distributed Spark pipeline on Amazon Web Service (AWS) to process all 5 million articles
- Designed a D3.js user interface powered by a graph database (Neo4j), Elasticsearch, and Python (Flask)

Condé Nast, *Freelance Software Engineer* Oct 2014 – Aug 2015
- Created an Applescript and Python app to tag and shorten Facebook/Twitter posts reaching 4 million followers
- Built a Google Calendar Extension to sync production sheet across team of writers/editors at ArchDigest

UBS, *Quantitative Portfolio Risk Management* Jun 2012 – Aug 2014
- Initiated management of curve exposure, not captured under bank's standard risk framework
  - Applied unsupervised machine learning (PCA) to identify $570k in uncaptured sensitivity to 0.01% move in rates
- Automated daily manual 2½ hour risk metric evaluation of $658 million trading portfolio using Python

PROJECTS

Tappt, *co-founder and full stack engineer* (tappt.co): search human speech in video
- Architected logic to transcribe and index videos in Flask; designed user interface and JavaScript fuzzy search

Connecting Every Bit of Knowledge (Wikipedia's First Link Network)
- Developed a novel graph algorithm to map influence; published in the *Journal of Computational Science*

Mathematics Association (MAA) Seaway Section 2012, gave cryptography talk on "Secret Sharing Schemes"
- Explained how to distribute a secret among a group, which is revealed only if enough members come together

EDUCATION

University of Vermont, M.S. Applied Mathematics (2016) Burlington, VT
Course Instructor: Calculus I (72 students) and Calculus II (38 students)

Hamilton College, Honors B.A. Mathematics, Magna Cum Laude (2012) Clinton, NY
19th Gold Scholar for student of "highest standards." *Phi Sigma Iota*: highest honor for foreign languages

Paris Institute of Political Studies, Sciences-Po "*ranked 4th in the world for political science*" Paris, France
Full-year immersion program, exclusively in French (2011)