Mark Ibrahim

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TECH	AWARDS
• Python (scikit-learn, numpy, object-oriented, PyTest), Git, TensorFlow, Linux bash, SQL, JavaScript, LaTex, VIM *familiar: Java, AWS, Neo4j, ElasticSearch, D3.js, Spark*	• Gighacks Burlington 2015: "*most innovative app*" civic engagement through video search
• Co-organizer of Burlington Python Developers' Group • 180 members; led beginner Python Workshop	• UVM Agile CodeFest 2015: UFeedMe, 1st place winner interactive map of free food on campus

EXPERIENCE   New York, NY

Senior Machine Learning Engineer, Center for Machine Learning at Capital One   Sep 2016 – Present
- Engineering a real-time notification system predicting unwanted charges on 300 million transactions per month
  - Architecting Lambda microservices in Java and Python to serve machine learning predictions
- Building Kafka streaming demo for CEO, which visualizes sentiment of conversations with Eno chat bot
- Co-leading explainable AI research effort to understand the predictions of deep neural networks

Data Engineering Fellow (2016) & **Technical Advisor**, Insight Data Science   May 2016 – Present
- Developed a graph-based knowledge search engine (*knowledgesearch.us*) powered by Wikipedia
  - Distributed parsing of all 5 million articles using Spark on Amazon Web Services (AWS)
- Designed a D3.js user interface powered by a graph database (Neo4j), Elasticsearch, and Python (Flask)

Freelance Software Engineer, Condé Nast   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

Quantitative Portfolio Risk Analyst, UBS   Jun 2012 – Aug 2014
- Applied unsupervised machine learning (PCA) to identify $570k in uncaptured sensitivity to 0.01% move in rates
- Automated daily 2½ hour manual risk calculation for $658 million trading portfolio in Python

RESEARCH & PROJECTS

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

Explainable AI: "*Understanding the predictions of deep neural networks.*" Conference Speaker, 2017
Data Driven at George Washington University

"Connecting Every Bit of Knowledge: *Wikipedia's First Link Network*." 2017, *Journal of Computational Science.*
- Developed novel graph algorithm to measure article influence in directed cyclic graphs

Reviewer for academic journal *IEEE Transactions on Network Science and Engineering*, 2017-2018.

EDUCATION

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

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

French immersion program (2011), Sciences-Po "*ranked 4th in the world for political science*"   Paris, France