

# Mark Ibrahim

mark.ibhm@gmail.com • (973) 459-8429 • [markibrahim.me](mailto:markibrahim.me)  
in [marksibrahim](#) • [github.com/marksibrahim](#)

## TECH

- Python (scikit-learn, numpy, object-oriented, PyTest), Git, TensorFlow, Linux bash, SQL, JavaScript, LaTeX, VIM  
*familiar: Java, AWS, Neo4j, Elasticsearch, D3.js, Spark*
- Co-organizer of Burlington Python Developers' Group
  - 180 members; led beginner [Python Workshop](#)

## AWARDS

- Gighacks Burlington 2015: “*most innovative app*”  
civic engagement through video search
- UVM Agile CodeFest 2015: [UFeedMe](#), 1<sup>st</sup> 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 ([knowledgegraph.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

[Data Driven](#) (2017) at George Washington University; Applied Machine Learning (2018) Tom Tom Conference

“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)

University of Chicago (2015), N.S.F. summer research in pure mathematics

Chicago, IL

### 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