

EDUCATION

Columbia University, New York, NY

M.S. in Computer Science, Machine Learning, GPA: 4.0/4.0

October 2019

B.A. in Computer Science, GPA: 4.0/4.0

May 2017

Awards and Honors

Graduated *summa cum laude*

May 2017

Computer Science Department Award cash prize

April 2017

Junior Phi Beta Kappa inductee

December 2016

TECHNICAL SKILLS

Languages: Python, Java, C, C++, Go, PHP, Scala, Javascript

Development Tools: Jupyter Notebook, PyCharm, Vim, IntelliJ, Sublime, Xcode, Eclipse

Technologies: SQL Server, Vertica, Kafka, MongoDB, Docker, Kubernetes, ZooKeeper, Splunk, S3

EXPERIENCE

Citadel

September 2019 – Present

Quant Developer - Commodities

- Worked with investment professionals, analysts, and quant researchers to create applications for the Financial Transmission Rights (FTRs), distillates, and global freight teams.
- Created efficient data pipelines (SQL Server, Kafka, S3), designed and implemented modeling and prediction algorithms (pandas, networkx, numpy, tensorflow) and created visualizations (Flask + Plotly Dash).
- Led tech buildouts that allowed the FTR team to analyze, model, and participate in MISO and PJM auctions.
- Built the ship-tracking platform and designed the vessel destination and ETA prediction algorithms for freight.

Xandr

July 2017 – August 2019

Software Engineer - Optimization

- Developed budgeting and valuation mechanisms for Xandr's demand-side platform.
- Designed machine learning algorithms for post-click and post-view cost-per-acquisition (CPA) optimization.
- Scaled Python and Java streaming applications to optimize millions of dollars of daily ad spend.
- Improved and maintained the real-time programmatic advertising infrastructure written in C.

Department of Computer Science, Columbia University

January – May 2017

Teaching Assistant

- TA for Analysis of Algorithms I, an introduction to the design and analysis of efficient algorithms.
- Held office hours, helped students with homework via Piazza, graded assignments, and proctored exams.

AppNexus

May – August 2016

Software Engineering Intern

- Created a standalone Scala application that automated a time-consuming data recovery process.
- Improved the data platform's job scheduler by creating the API for ad hoc job processing.

PROJECTS

Approximate Near Neighbor Search under ℓ_∞

March - May 2019

- Final project on data structures for approximate near neighbor search in ℓ_∞ normed spaces.
- Proposed two original data structures for this problem that have good space/time bounds in low-dimensions.

Deep Learning for Network Traffic Classification

October - December 2018

- Predicted Server Name Identification (SNI) from HTTPS features using deep learning.
- Compared performance of Random Forest, CNN, RNN, and Ensemble Methods.

2-Way k-Means: A Model for Microbiome Samples

September 2016 - August 2017

- Clustering research with Professor Itsik Pe'er for the Human Microbiome Project.
- Paper presentation at KDD 2017 and published in the Journal of Healthcare Engineering, vol. 2017.
- Weston J. Jackson, Ipsita Agarwal, and Itsik Pe'er. "2-Way k-Means as a Model for Microbiome Samples." *Journal of Healthcare Engineering*, vol. 2017, Article ID 5284145, 7 pages, 2017. doi:10.1155/2017/5284145.