NICHOLAS PETOSA

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EDUCATION

AUG 2018 – DEC 2019	**Georgia Institute of Technology – M.S. in Computer Science**
	• Specialization in Machine Learning.
2015 – 2018	**Georgia Institute of Technology – B.S. in Computer Science – *GPA: 4.0/4.0***
	• Concentrations in Artificial Intelligence and System Architecture.

EXPERIENCE

SUMMER 2018

Microsoft – Software Engineer Intern – *PowerBI Advanced Analytics*

- **Deep Learning & Natural Language Generation.** Designed and trained a deep LSTM network to generate English descriptions of data visuals with 95% accuracy and strong generalization.
- **Transparent Modeling.** Created an application at Microsoft's company hackathon for training and visualizing deep general additive models (GAMs), enabling users to build transparent, accountable models of their data. The project was recognized by company executives and is being productionized.

SUMMER 2017

Amazon – Software Development Engineer Intern – *Customer Account Protection*

- **Machine Learning.** Integrated a random forest classifier into Amazon's production sign-in systems, which handles millions of sign-ins per day. The model predicts whether clusters of customers are malicious and suggests disciplinary action to Amazon fraud investigators. Used scikit-learn and Weka.
- **Data Visualization.** Created interactive suspicious account cluster visualizer using d3.js. Integrated internally into dashboard used by hundreds of Amazon fraud investigators.

SUMMER 2016

Cisco – Software Engineer Intern – *Global Support Experience*

- **Data Science.** Created an internal web app using R and Shiny for measuring partner performance. Cisco executives estimated the tool would save $150k per quarter.
- **Web Development.** Redesigned a service wrapper with high visibility within Cisco with Java Spring.

RESEARCH

JAN 2018 - PRESENT

Graduate Research Assistant – Georgia Tech – *Quantitative Software Research Group*

- Research the application of deep learning techniques to quantitative finance under Dr. Tucker Balch.
- Implemented a deep Q-learning trading agent from scratch using Keras and Zipline. Agent was trained using walk-forward validation over historical price data. Results were presented at QuantCon 2018.
- Investigate applications of time series classification, deep reinforcement learning, and anomaly detection to the lab's stock market exchange simulator.

AUG 2016 - AUG 2017

Undergraduate Research Assistant – Georgia Tech – *Sherrill Group*

- Designed, developed, and implemented a Python Flask service and MongoDB back-end for PSI4, a popular quantum chemistry research package. *Published undergraduate thesis on this research.*

MAR 2016 - MAR 2017

Undergraduate Research Assistant – Georgia Tech – *Contextual Computing Group*

- Researched accessibility technology and created software tools for the deaf. Built a cross-platform mobile app with Ionic which extracts text from pictures and converts it to sign language.

ADDITIONAL EXPERIENCE

AUG 2018 - PRESENT

Graduate Teaching Assistant – Georgia Tech – *CS 7646: Machine Learning for Trading*

- Will be grading assignments, answering questions, and holding regular office hours for the course.

SPRING 2017

Google CodeU Participant

- A Google invite-only program. Worked remotely with a small group of peers to create a messenger web app over the 12-week program. Participated in regular code reviews with a Google engineer.

AWARDS

FINRA Data Analysis Prize (HackGT Hackathon 2017) • First Place (Coca-Cola CoolerHacks Hackathon 2016) • Firebase Prize (MHacks: Refactor Hackathon 2016) • First Place (SwampHacks Hackathon 2016) • Yik Yak Prize (HackDuke Hackathon 2015)

SKILLS

Programming Languages – Python, Java, JavaScript, C
Tools & Platforms – Keras, PyTorch, TensorFlow, CNTK, d3.js, Zipline, scikit-learn, Flask, MongoDB, Git
Areas of Interest – Quantitative Finance, Deep Learning, Machine Learning, Artificial Intelligence, Data Visualization