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 using Keras and Tensorflow to summarize PowerBI data visuals in plain English. The network uses the underlying visual data as input, and leverages an LSTM encoder-decoder to represent data series of arbitrary length and dimensionality as a fixed-size embedding. Achieves 95% accuracy on unseen synthetic data and generalizes well to unlabeled real-world time series.

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 Engineering 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 in Python using Keras and Zipline, as well as a deep supervised time series classifier using Keras. Currently investigating techniques for exotic time series classification, deep unsupervised dimensionality reduction, and anomaly detection.

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 for the hearing impaired and created software tools and applications for the deaf. Built a cross-platform mobile app with Ionic which reads text from pictures and converts it to sign language.

ADDITIONAL EXPERIENCE

AUG 2018 - PRESENT **Graduate Teaching Assistant – Georgia Tech – *CS 4646: 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, TensorFlow, CNTK, d3.js, Zipline, scikit-learn, Flask, MongoDB, Git
Areas of Interest – Quantitative Finance, Deep Learning, Machine Learning, Artificial Intelligence, Data Visualization