# NICHOLAS PETOSA

**(631) 759-6146**
https://linkedin.com/in/petosa • nick.petosa@gmail.com
https://devpost.com/petosa • https://github.com/petosa

## 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 summarize data visuals in plain English using the raw underlying data as input. The network leverages an LSTM encoder-decoder to represent data series of arbitrary length and dimensionality as a fixed-size embedding, facilitating unsupervised feature extraction and dimensionality reduction. Used Keras and TensorFlow.

SUMMER 2017 **Amazon – Software Development Engineer Intern – *Customer Account Protection***
- **Machine Learning.** Integrated a random forest classifier into Amazon's sign-in systems capable of classifying clusters of malicious customers and automatically banning those accounts. Reduces number of customer clusters manually investigated by over 50%. Used scikit-learn and Weka.
- **Data Visualization.** Created interactive 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/vendor 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***
- Graduate researcher under Dr. Tucker Balch. Research centers on machine learning for trading.
- 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 my undergraduate thesis on this research.*

MAR 2016 - MAR 2017 **Undergraduate Research Assistant – Georgia Tech – *Quantitative Software Research 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