

**OBJECTIVE:** To find a graduate teaching assistant or a graduate research assistant position for spring 2020.

## ACADEMIC EXPERIENCE

**Georgia Institute of Technology:** Master of Science in Computer Science (**Accepted for Spring 2020**) **01.2020 – 05.2021**  
**Specialization:** Machine Learning

**Georgia Institute of Technology:** Bachelor of Science in Computer Science **05.2015 – 12.2019**  
**Threads:** Devices, Intelligence

## PROFESSIONAL EXPERIENCE

**Inovar Health, LLC:** Software Development and Machine Learning Engineer **11.2019 – current**  
Worked on a mobile application that matches users with similar activity interests within an organization. Worked on matchmaking algorithm that used data science and machine learning to optimize matches made. Customers include Georgia State University, Mercer University, and Georgia Power.

**High Performance Architecture (HPArch) Lab at Georgia Tech:** Student Assistant **05.2019 – current**  
Worked on the following projects during time at the HPArch lab:

- Optimizing execution of visual SLAM on the Raspberry Pi to achieve a 5× speedup in total processing time.
- Intelligent context-aware scheduling algorithm for dynamically allocating CPU resources, achieving a 42% speedup compared to the Linux scheduler.
- Exploiting sparsity of the SLAM algorithm to create an efficient, low-power SLAM implementation on the FPGA, which consumes 2.5× less power and is 7.4× faster than the state-of-the-art.
- Creating a secure and verified location-aware communication mechanism for autonomous vehicles.

**Ciena Corporation:** Software Engineering Intern **05.2017 – 05.2018**  
Developed software to interface with network devices (e.g., Cisco Meraki) for orchestration, which was deployed to over 150 customers worldwide, with 15 being tier 1 service providers. Maintained CI/CD pipeline for application build process.

**SysGee Incorporated:** Full Stack Web Development Intern **05.2016 – 01.2017**  
Performed full stack development of web applications using PHP, MySQL, HTML, CSS, and JavaScript.

## PROJECTS

**Secure Location Aware Authentication and Communication Protocol for Autonomous Systems** **11.2019**  
Developed a secure and verified location-aware communication protocol for autonomous vehicles that uses asymmetric encryption to broadcast signed messages between vehicles, where encryption keys are shared visually (e.g., QR codes).

**Ringo: Optimal Ring Peer-to-peer Communication Protocol** **04.2018**  
Designed a peer-to-peer communication protocol that dynamically forms an optimal ring network for reliable data transfer.

## PAPERS AND PUBLICATIONS

**PISCES: Power-Aware Implementation of SLAM by Customizing Efficient Sparse Algebra** **11.2019**  
Implements a power-efficient SLAM algorithm on the FPGA by exploiting the sparsity of SLAM algorithms. Consumes 2.5× less power and is 7.4× faster than the state-of-the-art. Submitted to Design Automation Conference 2020.

**Context-Aware Task Handling in Resource-Constrained Robots with Virtualized Execution** **09.2019**  
Devises a dynamic time-sharing mechanism that uses a robot's sensor inputs to dynamically allocate Docker resources using reactive programming. Achieves a 42% speedup compared to the Linux scheduler. Submitted to RA-L with IRCA option.

**SLAM Performance on Embedded Robots (Awarded the 3<sup>rd</sup> Place in 2019 ACM SRC @ ESWEEK)** **07.2019**  
Measured and optimized the performance of running stereo camera SLAM on the Raspberry Pi. Concludes that our optimizations can speed up the algorithm's runtime by about 5× with minor impact on accuracy.

## SKILLS

- **Artificial Intelligence and Machine Learning:** NumPy, Pandas, TensorFlow, PyTorch, Keras, Scikit-Learn
- **Embedded Devices:** ARM, Raspberry Pi, Arduino, Mbed OS, Node-RED, MQTT
- **Full Stack Development:** React, React Native, Angular, Apollo Client, ASP.NET Core, Apollo Server, Express.js, Docker, Kubernetes
- **Programming Languages:** Python, TypeScript, F#, C, C++, Rust, C#, Java, Kotlin, Scala, SQL, GraphQL
- **Reverse Engineering and Malware Analysis:** Ghidra, IDA Pro, Cuckoo Sandbox, Yara, Capstone, Frida, WinDbg, x64dbg