NIMA SHOGHI | 404-862-0633 | nimashoghi@gmail.com | https://nima.sh | https://github.com/nimashoghi

EDUCATION

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

PROFESSIONAL EXPERIENCE

High Performance Architecture Lab at Georgia Tech: Student Assistant   **05.2019 – current**
Started as an unpaid summer position but was hired for a paid fall semester position.
Researched visual SLAM techniques with mono, stereo, and RGB-D camera setups.
Worked on running stereo camera SLAM in real-time on the Raspberry Pi. Used C++ with
libraries such as Eigen, OpenCV, and Pangolin. Used Docker for deployment onto the Pi.

Ciena Corporation: Software Engineering Intern   **05.2017 – 05.2018**
Started as a summer internship but was extended to a yearlong internship.
Developed software to interface with network devices and extract normalized data in
order to provide an abstraction layer for device orchestration. Worked with Cisco Meraki
and researched the communication layer of Meraki devices to integrate with the
orchestration platform. Worked in the DevOps team to maintain the CI/CD pipeline.

SysGee Incorporated: Full Stack Web Development Intern   **05.2016 – 01.2017**
Outlined, developed, and tested web applications. Performed full stack development:
PHP and MySQL on the backend and HTML, CSS, and JavaScript (JQuery) on the frontend.

PROJECTS

Center for Hard to Recycle Materials (CHaRM) Mobile Application   **09.2018 – 04.2019**
Developed a cross platform mobile app that allows visitors of CHaRM to log submissions
electronically. Powered by React Native, Apollo Client, ASP.NET Core, and MSSQL.

Ringo: Optimal Ring Peer-to-peer Communication Protocol   **01.2018 – 05.2018**
Designed and implemented a peer-to-peer communication protocol that dynamically
forms an optimal ring network and performs reliable data transfers over that network.

PUBLICATIONS AND TECHNICAL PAPERS

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 CPU resources using reactive programming. Uses Docker to enable
the CPU to run multiple independent tasks. Achieves a 42% speedup compared to the
Linux scheduler. Submitted to RA-L with IRCA option on September 2019.

SLAM Performance on Embedded Robots (Awarded the 3rd 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 times with minor impact on accuracy, allowing us to run accurately in real-time.

SKILLS

- **Artificial Intelligence and Machine Learning:** NumPy, Pandas, TensorFlow, PyTorch, Keras, Scikit-Learn
- **Containers, Microservices, and Distributed Computing:** Docker, Kubernetes, Microsoft Orleans
- **Embedded Devices:** ARM, Raspberry Pi, Arduino, Mbed OS, Node-RED, MQTT
- **Programming Languages**: Python, TypeScript, F#, C, C++, C#, Java, SQL
- **Reverse Engineering and Malware Analysis:** Ghidra, IDA Pro, Cuckoo Sandbox, Yara, Capstone, Frida, WinDbg, x64dbg
- **Systems Programming:** Windows Device Drivers, Intel VT-x and VT-d, x86 and x86-64 assembly
- **Miscellaneous:** Windows, Linux, Debugging with Visual Studio and GDB, Git, PowerShell, Bash