Alexander D. **Gotsis**

Seeking Internship/Coop June - December 2019

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Education

Carnegie Mellon University *Pittsburgh, Pennsylvania*

B.S. in Electrical and Computer Engineering & M.S. in Electrical and Computer Engineering *Expected May 2019 and May 2020*

- Overall GPA 3.61/4.00 as of September 2018
- Carnegie Institute of Technology Dean's List Fall 2015, Spring 2017, and Spring 2018

Selected Coursework

Operating Systems Design & Implementation	Structure & Design of Digital Systems	Advanced Storage Systems (curr.)	Calculus I/II/III
Embedded Systems Software Engineering	Logic Design and Verification (curr.)	Real-Time Embedded Systems (curr.)	Physics I/II

Experience

MITRE Corporation *Bedford, Massachusetts*

Embedded Software Coop/Intern *May 2018 - August 2018*

- Develop and test a multiple power & clock fault testing suite as Python interfaces for Arbitrary Waveform/Function Generators.
- Profile Dwenguino AVR instructions and develop suite for profiling other hardware implementations.
- Engineer methods to extract cryptographic information at a distance by means of electromagnetic emissions.
- Alter programmable logic for secure video game console eCTF to store symmetric keys. Win 2nd place in eCTF and Iron Flag Award.

Robotany *Pittsburgh, Pennsylvania*

Electrical Engineering Power Systems Intern *May 2017 - May 2018*

- Design 3-phase delta 240V electrical power system for robotic vertical farm, fixture wiring, and control racks.
- Specify and implement power system including conduits, transformers, and load centers. Manage and direct assembly teams.

Auditory Lab (Profs. Heller and Grover) *Pittsburgh, Pennsylvania*

Electrical and Computer Engineering Research & Development Engineer *May 2016 - May 2017*

- Engineer mobile application intended to assist in teaching echolocation skills to visually impaired persons on an interdisciplinary team with the Psychology and ECE departments under Professors Heller and Grover.
- Provide back-end design for and administrate data collection server.

Eberly Teaching Center *Pittsburgh, Pennsylvania*

Eberly Teaching Center Developer *Sept. 2016 - Dec. 2016*

- Design and implement programmatic online course tools with JavaScript and jQuery for the Open Learning Initiative.
- Light system administration work on a Debian Apache 2 system.

Skills & Hobbies

SystemVerilog	FPGAs	ARM	Python	Realtime Embedded	Power Systems	AutoCAD / SolidWorks	Climbing
UNIX Systems	C / C++	x86	Git	Lab Equipment	DoD Secret Clearance	Rapid Prototyping	Hiking/Backpacking

Projects & Extracurriculars

- **UNIX-like Kernel from Scratch** Operating Systems Design & Implementation (Spring 2018)
  Design & implement a small (14k loc) UNIX-like kernel with a partner over 8 weeks. Some features include kernel-level threads, user-level threads, condition variables, mutexes, readers-writers locks, and virtual memory management.
- **Embedded Capture the Flag** 2nd Place Team, Iron Flag Award (June 2018 - July 2018)
  Design & implement a secure video game console with a team part time over 8 weeks. Defend own design & attack other team's systems.
- **Build 18 Hardware Hackathon** Builder (January 2017)
  During a week-long Hardware Hackathon, design and implement a protocol for driving a 96 x 64 RGB LED Matrix via an FPGA in SystemVerilog. Use this display to show programmatically derived 3D animations.
- **Activities Board Technical Committee** Core Member & Executive Board (2015 - Present)
  Entirely student driven, as a member of the Executive Board, lead, plan and implement event production services for campus events from small events to well known concert performers, implementing complex 3-phase power systems, and high grade audio and lighting rigs.
- **CMU Explorers Club (CMUX)** Member (2015), Hiking Chair & Treasurer (2016-Present)
  CMUX is an club dedicated to making outdoor activities more accessible. Organize hikes as Hiking Chair. Manage finances as Treasurer.