

# Alexander D. Gotsis

SEEKING FULL-TIME EMPLOYMENT STARTING SUMMER 2020

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## Education

### Carnegie Mellon University

M.S. IN ELECTRICAL AND COMPUTER ENGINEERING (OVERALL GPA 3.65/4.00)

Pittsburgh, Pennsylvania

Expected May 2020

### Carnegie Mellon University

B.S. IN ELECTRICAL AND COMPUTER ENGINEERING WITH UNIVERSITY HONORS (OVERALL GPA 3.49/4.00)

Pittsburgh, Pennsylvania

May 2019

- CIT Dean's List Fall 2015, Spring 2017, and Spring 2018, Senior Leadership Recognition, University Honors

## Selected Coursework

Logic Design and Verification	Intro to Computer Architecture	Structure & Design of Digital Systems	Capstone Design
Operating Systems Design & Impl.	Embedded Systems Software Engineering	Advanced Storage Systems	Secure Coding

## Experience

### NVIDIA Corporation

GPU RTL DESIGN INTERN

Santa Clara, California

September 2019 - December 2019

- Future contributions to GPU submodules on the GPU RTL Design team.

### NVIDIA Corporation

CUDA SYSTEMS SOFTWARE INTERN

Santa Clara, California

July 2019 - September 2019

- Future work on the Unified Virtual Memory subsystem of the CUDA computing platform. Interface CPU and GPU memories.

### MITRE Corporation

EMBEDDED SOFTWARE COOP/INTERN

Bedford, Massachusetts

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

ELECTRICAL ENGINEERING POWER SYSTEMS INTERN

Pittsburgh, Pennsylvania

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)

ELECTRICAL AND COMPUTER ENGINEERING RESEARCH & DEVELOPMENT ENGINEER

Pittsburgh, Pennsylvania

May 2016 - May 2017

- Engineer mobile application to assist in teaching echolocation skills to visually impaired persons on an interdisciplinary team.
- Provide back-end design for and administrate data collection server.

## Skills & Hobbies

SystemVerilog	FPGAs	ARM	Python	Computer Architecture	Realtime Embedded	Power Systems	Climbing
UNIX Systems	C / C++	x86	Git	Reverse Engineering	Lab Equipment	Rapid Prototyping	Hiking/Backpacking

## Projects & Extracurriculars

- **RTL Design/Verification Projects** LOGIC DESIGN & VERIFICATION - 18-341, FALL 2018, COMPUTER ARCHITECTURE - 18-447, SPRING 2019  
Design and implement optimized pipelined matrix multiply-accumulate, concurrent "NoC" packet router, and more in SystemVerilog. Implement a series of increasingly complex RISC-V processors ranging from a single-cycle design to an out-of-order architecture.
- **UNIX-like Kernel from Scratch** OPERATING SYSTEMS DESIGN & IMPLEMENTATION - 15-410/605, 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.
- **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)  
Direct and implement production services for campus events, including 3-phase power systems and professional 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.