Margaret Cech

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Education

Binghamton University, State University of New York, **Watson School of Engineering and Applied Science**

Bachelor of Science in Electrical Engineering, Concentration in Computer Science   Expected May '20

Cumulative GPA: 3.84/4.00 | Dean's List: Fall 2016 – Spring 2019

NYS STEM Scholarship | Lockheed Martin Honors Scholarship | IEEE Scholarship | Tau Beta Pi Honor Society | HKN-IEEE

Technical Skills

Software and OS: Xilinx (logic program), Arduino, Arena, Solid Edge, LTSpice, Linux/UNIX, MS Suite (Word, PowerPoint, Excel, Project), Simulink

Programming Languages: Python, C, Java, VHDL, MATLAB, ARM (Assembly)

Technical Courses: Operating Systems, Computer Organ. & Microprocessors, Signals and Systems, Circuits, Electronics I, Programming for Engineers I, Digital Logic Design, Programming w/ Objects, Control Systems, Communication Systems

Professional Experience

SAS, Raleigh, NC   May '19 – Aug '19

Deep Learning Software Development Intern

- Developed an image captioning API in Python to assist customers in organizing data for captioning using convolutional and recurrent neural networks
- Wrote customer example in Jupyter notebook to demonstrate use cases of image captioning API
- Initiated development of support for ONNX deep learning model to SAS models
- Collaborated with interns on a hackathon studying the effects of education on women's participation in the workforce

Spectracom, Orolia Group, Rochester, NY   May '18 – Aug '18

Electrical Engineering Intern

- Debugged and optimized production test scripts written in Python to verify products for shipment were up to standards
- Updated project lead on progress at weekly meetings, as well as communicated with operations manager and head of manufacturing to get production test scripts approved to be integrated into manufacturing test environment
- Researched and implemented CAN (Controller Area Network) bus device to reverse engineer data from a vehicle to read wheel speeds

Ernst & Young Trajectory Program, Binghamton, NY   Jan '18 – June '18

Student Consultant

- Implemented a formal cyber security assessment program to evaluate firm's future cyber security capabilities
- Built an assessment tool by creating a Python GUI that calculated specific scores based on responses to cyber security questionnaire and presented final solution to executives at EY office in Times Square

Team Project Experience

Remote Investigation Minesweeper (RIMS), Binghamton, NY   Sep '19 – Present

Team Lead, Project Manager

- Design semi-autonomous rover to detect IEDs buried in the sand and output mapped threats for sponsor Lockheed Martin
- Research and choose metal detection, voltage detection, and rover communication components to integrate onto rover
- Write final report detailing design choices and how the rover will be built including block diagrams, circuit designs, software flow, and CAD drawings
- Communicate with faculty and industry advisors about team status and track progress through Gantt chart

University Rover Challenge, Binghamton, NY   Mar '17 – Apr '19

Electrical Team Member

- Redesigned motor controls for the rover using an Atmega328 chip and UART communication through C and Assembly
- Tested sensors using an Arduino microcontroller to prepare them for use on the rover
- Explored sensors such as LIDAR and radar to find the best option for obstacle avoidance, route planning, and 3D mapping

Autonomous Rover, Binghamton, NY   Apr '18 – May '18

Team Member

- Formulated program in assembly and converted assembly to binary instructions using registers and an ALU (Arithmetic Logic Unit), and stored instructions in multiplexers to move rover to specific (x,y) coordinates
- Redeveloped program in C to change rover objective to traverse and solve a maze

Leadership Experiences:

- **Society of Women Engineers –** *Treasurer, Website Committee Chair*   May '18 - Present
- **Eta Kappa Nu Honor Society –** *Treasurer*   Sep '19 - Present
- **Club Field Hockey –** *Captain*   May '19 – Present
- **Lee Barta Community Center After School STEM Program –** *Volunteer*   Oct '19 – Present
- **SAS Intern Hackathon –** *Team Lead*   Jul '19