

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 2020

Cumulative GPA: 3.83/4.00 | Dean's List: Fall 2016-Spring 2018

NYS STEM Scholarship: Fall 2016-Spring 2020 | Lockheed Martin Honors Scholarship | Eta Kappa Nu Honor Society

Technical Skills

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

Programming Languages: Python, C, Java, MATLAB, AVR (Assembly)

Spoken Language: Spanish

Technical Courses:

Signals and Systems, Semiconductor Devices, Circuits, Electronics, Programming for Engineers I, Digital Logic Design, Programming Concepts & Applications, Programming w/ Objects

Professional Experience

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

- Worked with EY consulting professionals on a team of five to implement a formal cyber security assessment program to evaluate firm's future cyber security capabilities
- Developed an assessment tool by creating a Python GUI that calculated specific scores based on responses to cyber security questionnaire
- Attended regular sessions with EY professionals, who were acting as the client, to gain exposure to challenges faced by global institutions as well as exposure to consulting, and presented final solutions to executives in EY Times Square

Team Project Experience

University Rover Challenge, Binghamton, NY

Mar '17 – Present

- Redesign motor controls for the rover using an Atmega328 chip and UART communication through C and Assembly
- Test sensors using an Arduino microcontroller to prepare them for use on the rover
- Explore 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

- 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

Tic-Tac-Toe Game, Binghamton, NY

Nov '17 – Dec '17

- Developed a tic-tac-toe program in Python that allows a user to play games against another user, keep track of each player's score, reset the game, and view a graph of each player's wins, losses, and ties
- Coded an interactive GUI environment using Tkinter, matplotlib, and winsound modules, thoroughly tested the project to eliminate any bugs or possibilities of user errors, and created a user's guide to game play

Binary Calculator, Binghamton, NY

Nov '17 – Dec '17

- Designed a three-function calculator that can add, subtract, and multiply two eight-bit binary numbers and output the answer in hexadecimal to a seven-segment display using logic gates
- Built logic components using the Xilinx logic program and implemented the design using a Papilio Duo FPGA board

Leadership Experiences:

The Society of Women Engineers, Binghamton, NY

Sep 16' - Present

Treasurer

- Manage any monetary transactions carried out by the organization's executive board
- Create plan for each semester, and communicate with both the Watson School and the Student Association to keep track of accounts and stay within budget
- Plan and organize travel, housing, and registration fees for National and Regional conferences while staying within budget
- Developed new website (binghamton-swe.org) using HTML, CSS, and JavaScript and lead committee to maintain it