

Abigail McHugh

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EDUCATION

Binghamton University, State University of New York, The Thomas J. Watson School of Engineering and Applied Science
Bachelor of Science in Computer Science **Expected May 2021**
GPA: 3.44/4.00 | Dean's List: Spring 2019, Fall 2018, Fall 2017 | America East Honor Roll: Fall 2017 – Spring 2019

TECHNICAL SKILLS

Languages: C++, C, Java, Python, HTML/CSS, MATLAB, Arduino

Software and OS: JFLAP, VirusTotal, SafeBreach, PhishMe, Eclipse, Git, Logisim, IDLE, Solid Edge, Arena

PROFESSIONAL EXPERIENCE

MassMutual, Ethical Hack Consultant | Springfield, MA

October 2019 – Present

- Provide weekly breach reports through analyzing current threat landscape, determining breach techniques in MITRE ATT&CK framework, and running corresponding penetration tests through Safebreach software
- Led engineering solution that replaced time-consuming penetration testing analytics with swift Python automation, resulting in a 90% decrease in time needed to analyze hashes and URLs returned by Safebreach

MassMutual, Ethical Hack Intern | Springfield, MA

May - August 2019

- Collaborated as part of three-person multidisciplinary Ethical Hack team utilizing Safebreach, FireEye, Splunk, PhishMe and other automated tools to identify and mitigate cyber threats and actors
- Created custom simulations in Safebreach penetration testing software using PCAP malware files and Python code, ran on MassMutual infrastructure model to determine vulnerabilities
- Analyzed 2017 Equifax data breach and MassMutual cybersecurity infrastructure and presented recommendations

Ernst and Young Trajectory Program, Team Member | Binghamton, NY

January - May 2019

- Operated with team of business students in selective program to develop cyber solutions for hypothetical company Ernst Bank
- Built Third-Party Risk Assessment Python GUI tool that organized different risk areas to design effective UI, and provided recommendations via automated calculation of Ernst Bank's risk score

Markets Bootcamp, Student | Binghamton, NY

January – April 2019

- Accepted into rigorous program that teaches students to analyze market trends through weekly seminars and mock interviews

Zurack Scholars Program, Inductee | Binghamton, NY

November 2018 – Present

- Competitive scholars' program that integrates Bloomberg Terminal, quantitative finance, and networking opportunities to prepare students for careers in finance

PROJECT EXPERIENCE

Cache Simulator | Binghamton, NY

November 2019

- Built read-only cache designed to simulate LRU, MRU, or random replacement methods based on user input in C

BigBits Number Calculator | Binghamton, NY

October 2019

- Created program in C that computed bitwise expressions of large hexadecimal numbers inputted by user in postfix format

Pippin CPU Emulator, Team Member | Binghamton, NY

April – May 2019

- Collaborated with partner to implement Pippin assembler capable of parsing instructions, maintaining memory, and displaying memory content in GUI through Java

LEADERSHIP EXPERIENCE

Coding in Action, Course Assistant | Binghamton, NY

February 2020 – Present

- Assist instructor during labs and hold independent office hours to answer student's questions and technical needs

Division I Swimming & Diving, Captain | Binghamton, NY

May 2019 - Present

- Train over 20 hours per week at the highest level of collegiate athletics as part of 25-person team
- Elected captain as a junior by peers and coaches for leadership, communication skills, and work ethic
- Lead team through workouts, solve interpersonal issues to ensure healthy team dynamic

Binghamton University, Resident Assistant | Binghamton, NY

August 2019 – Present

- Assume primary responsibility for safety and security of over 250 residents while on-call, organize community and social events, and direct students to university resources as part of 7-person team

Girls Who Code, Internal Manager | Binghamton, NY

February 2019 - Present

- Helped create groundbreaking program on campus that teaches coding classes to over 25 high school girls each semester
- Nationally recognized as one of the most successful programs in the country for student turnout and local community interest
- Grow club outreach through communication with university staff, local community leaders, and sponsors to manage logistics of computer software, travel, and overall student experience

HONORS & AWARDS

Upsilon Pi Epsilon Computer Science Honor Society

March 2020 – May 2021

Geraldine S. McDonald Engineering & Computer Science Student Professional Development Grant

February 2020

Binghamton Bearcats Athletics Fund Woman's Scholarship

May 2019- May 2021

- Selected from over 240 female-student athletes for excellence in academics, athletics, and commitment to community service

Division I Swimming & Diving Athletic Scholarship

August 2017 – May 2021