BLAINE HOAK

Ph.D. Student, Computer Science and Engineering

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EXPERIENCE

Undergraduate Research Assistant
Systems and Internet Infrastructure Laboratory
Jan 2020 – July 2020
Pennsylvania State University

- Researched the security of commercially available IoT home devices, and co-developed a secure, privacy-preserving smart doorbell system to combat concerns with current systems
- Built machine learning skills through scikit-learn and pytorch courses for future medical machine learning projects

Engineering Co-Op
BK Medical
May 2019 – Dec 2019
State College, PA

- Solely responsible for $100k per year project to implement change of materials and processes for all in-house manufactured transducers
- Conduct material compatibility testing, construct test units, and evaluate solutions to optimize cost without sacrificing form, fit, or function of final product
- Prepare professional reports on experimental findings suitable for submission to global company database.
- Present monthly updates on project status to representatives from all locations of BK Medical and third-party quality control experts.

Engineering Intern
Summit Radiation Safety Services
Oct 2018 – May 2019
Boalsburg, PA

- Use radiation measuring equipment and technical knowledge to accurately assess the radiation dose from radiation generating equipment to the patients and workers.
- Apply regulatory requirements and national standards in the assessment of equipment and facility compliance.
- Prepare professional reports suitable for submission to the client and regulatory authorities.

Undergraduate Research Assistant
Artificial Heart and Cardiovascular Fluid Dynamics Laboratory
May 2018 – Oct 2018
Pennsylvania State University

- Worked with a 7 Tesla MRI machine and backwards facing step model to study the properties of clots formed by a mechanical heart valve
- Presented at meetings biweekly and collaborated on suggestions for improving the research models and techniques

EDUCATION

Ph.D. Computer Science and Engineering
Pennsylvania State University
Aug 2020 – May 2024
GPA – 3.73

- Advisor: Dr. Patrick McDaniel

B.S. Biomedical Engineering
Pennsylvania State University
Jan 2017 – May 2020
GPA – 3.56

- Specialization: Medical Imaging and Devices

LEADERSHIP AND TEACHING

Teaching Assistant
CMPSC297 - Intro to C Programming
Fall 2021
Pennsylvania State University

Guided Study Group Leader
Women in Engineering Program
Jan 2019 – May 2020
Pennsylvania State University

Vice President
Nittany Chemical Society
May 2019 – May 2020
Pennsylvania State University

Learning Assistant
Chem112 - General Chemistry II
Spring 2018
Pennsylvania State University

PROFESSIONAL ACTIVITIES

Volunteer
Girls Who Code
Spring 2022
Pennsylvania State University

Creator and Volunteer
EECS Girl's Summer Camp
Summer 2021
Pennsylvania State University

PUBLICATIONS

Conference Proceedings

- Yohan Beugin, Quinn Burke, **Blaine Hoak**, Ryan Sheatsley, Eric Pauley, Gang Tan, Syed Rafiul Hussain, and Patrick McDaniel. "Building a Privacy-Preserving Smart Camera System". In: *Proceedings on Privacy Enhancing Technologies Symposium (PETS)*. July 2022.
- Ryan Sheatsley, **Blaine Hoak**, Eric Pauley, Yohan Beugin, Michael J. Weisman, and Patrick McDaniel. "On the Robustness of Domain Constraints". In: *Proceedings of the 2021 ACM SIGSAC Conference on Computer and Communications Security*. CCS '21. Virtual Event, Republic of Korea: Association for Computing Machinery, 2021, pp. 495–515. ISBN: 9781450384544. DOI: 10.1145/3460120.3484570. URL: https://doi.org/10.1145/3460120.3484570.