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## EDUCATION

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- **Carnegie Mellon University** December 2022  
*M.S. Machine Learning (School of Computer Science)* Pittsburgh, PA
- **University of Illinois at Urbana-Champaign** May 2021  
*B.S. Computer Science (College of Engineering); GPA: 3.95 - Dean's List* Champaign, IL

## EXPERIENCE

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- **Facebook, Software Engineer Intern** Summer 2021
  - Working on Ads Rendering Reliability team to detect and prevent bad ads
- **Facebook, Software Engineer Intern** Summer 2020
  - Worked on AI Infra Privacy & Security team to improve efficiency and scalability of threat modeling framework
  - Developed automation tools to improve security workflows for collection and analysis, and improved performance and functionality of existing security tooling with Python, PHP, and Javascript
- **Facebook, Software Engineer Intern** Summer 2019
  - Worked on Ads Data Services team to develop internal services responsible for 95% of ad traffic
  - Developed new debugging tool, adding functionality to querying language, and improved performance of tooling scripts by 18% for newly released backend service ADAL using C++, PHP, and JavaScript
- **Nod Labs, Software Engineer Intern** Summer 2017
  - Worked on the computer vision team to develop SLAM algorithm in C++
  - Designed and implemented bag of words model for image classification to substantially increase live object-tracking performance, and optimized 3D reconstruction projections with bundle adjustment algorithms to improve mapping accuracy
- **Thinkster, Software Engineer Intern** Summer 2016
  - Worked to design, develop, and maintain Thinkster's web platform hosting all content and serving over 10,000 monthly users

## RESEARCH

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- **Deep Neural Network Resilience** rsim.cs.illinois.edu
  - Explored reliability and resilience of deep neural networks with Professor Sarita Adve in collaboration with NVIDIA
  - Developed PyTorchFI, a run-time tool to model perturbations and measure impact on output, with over 16,000 downloads
  - Built more secure models for domain-specific resiliency, such as object recognition
- **IoT Network Security** nsrg.sprai.org
  - Exploring IoT device and network security with Professor Michael Bailey
  - Developing a browser based scanner to discover IoT devices on the local network and identify potential security vulnerabilities
- **Cybersecurity Network Detection** caesar.web.engr.illinois.edu
  - Exploring network security and network event detection with Professor Matthew Caesar in collaboration with AT&T
  - Developing a web mapping service to study the benefits of software-defined WAN to improve prediction accuracy of web attacks

## LEADERSHIP

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- **Hack4Impact** hack4impact.org
  - National Director of Product overseeing projects with 40 nonprofits across 15 international chapters of 700 students
  - Led team at UIUC as product manager & technical lead to build product for YMCA with userbase of over 24,000
- **HarkerDev** dev.harker.org
  - Founded student development team of ten, serving over 65,000 monthly users across 8 products. Acquired 2018.

## PUBLICATIONS & AWARDS

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- **PyTorchFI: A Runtime Perturbation Tool for DNNs, DSN-DSML'20** June 2020
- **Lynn Conway Research Award, Center for Applications Driving Architectures** May 2019
- **Gold Competitor, USA Computing Olympiad** January 2017