

## EDUCATION

### **Carnegie Mellon University**

*PhD Computer Science, Advisor: Phillip Gibbons*

Pittsburgh, PA  
expected May 2026

### **Carnegie Mellon University**

*BS Computer Science, Concentration: Computer Systems*

GPA: 3.52/4.00

Pittsburgh, PA  
May 2021

## RESEARCH EXPERIENCE

### **Prescriptive Memory**

*Advisor: Phillip Gibbons*

Oct 2021 - present

- Bringing application-layer semantics lower into the software stack for better application-specific optimizations.

### **NormanOS**

*Mentors: Justine Sherry, Hugo Sadok*

Aug 2020 - Aug 2021

- Provided OS support for FPGA-programmable smartNICs
- Designed interface between application and NIC
- *We need kernel interposition over the network dataplane.*

Hugo Sadok, Zhipeng Zhao, **Valerie Choung**, Nirav Atre, Daniel S. Berger, James C. Hoe, Aurojit Panda, and Justine Sherry.

HotOS '21: Proceedings of the Workshop on Hot Topics in Operating Systems. June 2021. Pages 152-158.

### **JIT Fuzzer**

*Mentors: Bryan Parno, Jay Bosamiya*

Jan 2020 - May 2021

- Development of fuzzer for finding security vulnerabilities in JIT compilers
- Wrote bug triager for speeding up vulnerability analysis

## WORK EXPERIENCE

### **Microsoft - Research Intern**

- Virtualizing tenant networks for Azure

May 2022 - Aug 2022

### **NVIDIA - Systems Software Intern**

- Increased number of GPU channels that one GPU context could support
- Improved error-handling for NVSwitch/NVLink

May 2020 - Aug 2020

### **NVIDIA - Systems Software Intern**

- Refactored GPU interrupt handling mechanism
- Wrote debugging extension for managing interrupts

May 2019 - Aug 2019

### **Castlight Health - Cybersecurity Intern**

- Set up framework for new in-house security incident and event management solution using ElasticSearch
- Environment setup for third-party security evaluations

May 2018 - Aug 2018

## TEACHING ASSISTANTSHIPS

- *CMU 15-410 Operating System Design and Implementation*
- *CMU 15-410 Operating System Design and Implementation*
- *CMU 15-330 Introduction to Computer Security*
- *CMU 14-513 Introduction to Computer Systems*

Feb 2021 - May 2021

Jan 2020 - May 2020

Aug 2019 - Dec 2019

Aug 2018 - Dec 2018

## OTHER PROJECTS

### **SouperDamGoodOS** (course project partner: Sam Damashek)

- Built OS kernel from scratch
- Supports SMP and limited group scheduling

Jan 2019 - Dec 2019

### **EasyCTF**

- Helped organize bi-annual security competition for high school students
- Featured: "Cybersecurity sleuths learn to think like hackers", CNET Magazine, May 15, 2016.

Jan 2015 - Dec 2018

## AWARDS

- CDDC CTF - 8th place (Team: PPP)
- CSAW CTF - 2nd place (Team: PPP)
- DEFCON CTF - 2nd place (Team: PPP)

2020  
2018  
2018