

# AMANDA C. HSU

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## EDUCATION

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### Georgia Institute of Technology

Ph.D. in Computer Science

Advisors: Professor Paul Pearce, Professor Frank Li

*Expected Graduation: 2026*

*GPA: 4.0*

### University of Illinois at Urbana-Champaign

B.S. Computer Engineering, with Honors

*May 2021*

*GPA: 3.52*

## PUBLICATIONS

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1. Mohammad A. Nouredine, Ahmed M. Fawaz, **Amanda Hsu**, Cody Guldner, Sameer Vijay, Tamer Başar, William H. Sanders (2019). Revisiting Client Puzzles for State Exhaustion Attacks Resilience. 2019 49th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN).
2. Mohammad A. Nouredine, **Amanda Hsu**, Matthew Caesar, Fadi A. Zaraket, William H. Sanders, P4 AIG: Circuit-Level Verification of P4 Programs. 2019 49th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN).

## RESEARCH EXPERIENCE

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### External Organization Identification

*University of Illinois at Urbana-Champaign*

Advisors: Professor Matthew Caesar

*July 2020 - May 2021*

- Analyze external sources for correlations to identify organizational boundaries in IPv4 space
- Sources include Censys scanning data and WHOIS records

### Circuit-Level Verification of P4 Programs

*University of Illinois at Urbana-Champaign*

Advisors: Professor William H. Sanders, Professor Matthew Caesar

*January 2019 - May 2021*

- Modeled data-plane programs as sequential circuits to be verified using hardware techniques including bounded model-checking
- Implemented with P4 language

### Client Puzzles for State Exhaustion Attacks Resilience

*University of Illinois at Urbana-Champaign*

Advisor: Professor William H. Sanders

*August 2018 - December 2018*

- Prove that client puzzles are a valid defense against Distributed Denial of Service (DDoS) attacks
- Implemented method of priority queuing requests determined by client puzzles in the TCP stack of the Linux Kernel

## PROFESSIONAL SERVICE

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- Lead Student Organizer, ACM SIGCOMM 2021
- Presented Student Welcome Session for all students attending SIGCOMM 2021
- Collaborated with professionals in the SIGCOMM community to compile content relevant to students attending academic conferences

- Student Program Committee Volunteer, ACM SIGCOMM 2021
  - Observed 2-day-long review of paper submissions to SIGCOMM 2021
  - Ensured that no committee members with conflicts were present during paper reviews
- Reviewer, USENIX NSDI 2021
- Student Organizer, ACM SIGCOMM 2020
- Reviewer, ACM CCS 2020

## AWARDS AND SCHOLARSHIPS

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President's Fellow, Georgia Institute of Technology	2021
Knights of St. Patrick Award, University of Illinois at Urbana-Champaign	2021
PricewaterhouseCoopers Grace Hopper Scholar	2018
North Shore Community Service Award for Extra Effort	2017

## INDUSTRY EXPERIENCE

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- Research Intern Censys* *May 2021 - August 2021*
- Work on attribution system that utilizes internet-wide scan data to associate assets including hosts, certificates, and domains, to customers
- Software Engineering Intern Censys* *May 2020 - August 2020*
- Work on attribution system that utilizes internet-wide scan data to associate assets including hosts, certificates, and domains, to customers
  - Contributions include API development in Go and Python as well as database management
- Non-Volatile Memory Firmware Validation Intern Intel Co.* *May 2019 - August 2019*
- Develop Python scripts to collect data to standardize test system setup, including hardware and software specifications
  - Scripts used to reduce false-negatives on firmware validation tests
- Analyst Intern, Independent Contractor Bellwether Analytics* *June 2018 - March 2019*
- Implemented small-scale data analysis for over 10,000 pharmaceutical records
  - Created applications to create precise market landscapes which were used to advise R&D departments of various pharmaceutical companies
  - Wrote JavaScript programs to collect and analyze data from specific public databases
  - Built GUI to make data analytics user-friendly

## LEADERSHIP AND EXTRACURRICULAR EXPERIENCES

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- Society of Women Engineers** *Aug 2017 - May 2021*
- President (2020-21)
  - Treasurer (2019-20)
  - Webmaster (2018-19)
  - SWE 5k Chair (2017-18)
  - Consultant (2019-20)

## SKILLS

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C, C++, Python, Javascript, Assembly Language (x86)