AMANDA C. HSU

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EDUCATION

Georgia Institute of Technology *Expected Graduation: 2026*
Ph.D. in Computer Science *GPA: 3.88*
Advisors: Professor Paul Pearce, Professor Frank Li

University of Illinois at Urbana-Champaign *May 2021*
B.S. Computer Engineering, with Honors *GPA: 3.52*

PUBLICATIONS

1. **Amanda Hsu**, Frank Li, Paul Pearce. Fiat Lux: Illuminating IPv6 Apportionment with Different Datasets. 2023 ACM SIGMETRICS (to appear).
2. Mohammad A. Noureddine, Ahmed M. Fawaz, **Amanda Hsu**, Cody Guldner, Sameer Vijay, Tamer Başar, William H. Sanders. Revisiting Client Puzzles for State Exhaustion Attacks Resilience. 2019 49th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN).
3. Mohammad A. Noureddine, **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

IPv6 Perspectives from Various Datasets *August 2021 - Present*
Georgia Institute of Technology
Advisors: Professor Paul Pearce, Professor Frank Li

- Characterize IPv6 usage according to various metrics by comparing relevant datasets
- Datasets analyzed include: WHOIS records from Regional Internet Registries, routing data from Route Views and RIPE RIS, active IPv6 hitlists
- Developed new methodology for analyzing IPv6 apportionment

External Organization Identification *July 2020 - May 2021*
University of Illinois at Urbana-Champaign
Advisors: Professor Matthew Caesar

- 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 *January 2019 - May 2021*
University of Illinois at Urbana-Champaign
Advisors: Professor William H. Sanders, Professor Matthew Caesar

- 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 *August 2018 - December 2018*
University of Illinois at Urbana-Champaign
Advisor: Professor William H. Sanders

- 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

AWARDS AND SCHOLARSHIPS

- Graduate Research Fellowship Program (GRFP), *National Science Foundation (NSF)* *2022*
- Herbert P. Haley Fellowship, *Georgia Institute of Technology* *2022*
- 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*

Travel Grants

- ACM Internet Measurement Conference (IMC) 2022

PROFESSIONAL SERVICE

- 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

INDUSTRY EXPERIENCE

Research Intern **Censys** *May 2021 - August 2021*
- Design and implement methods of HTTP scanning to identify strong attribution data points

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 advice 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

Society of Women Engineers *Aug 2017 - May 2021*

- President (2020-21)
- Treasurer (2019-20)

SKILLS

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