

# Benjamin VanderSloot

Assistant Professor  
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Computer Science  
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## Positions

*University of Detroit Mercy*  
Assistant Professor (2020 – present)  
College of Engineering and Science  
Electrical and Computer Engineering and Computer Science

## Education

*University of Michigan*  
Ph.D. in Computer Science, Spring 2020  
*Enhancing System Transparency, Trust, and Privacy with Internet Measurement*  
Advisor: J. Alex Halderman  
Committee: Roya Ensafi, Peter Honeyman, Baris Kasikci, Kentaro Toyama

*University of Michigan*  
M.S. in Computer Science, Spring 2018

*University of Michigan*  
B.S.E. in Computer Science, Minor in Mathematics, Spring 2015  
*summa cum laude*

## Research

My research focuses on security and privacy in widely used computer systems and networks. I have helped detect and evade Internet censorship, measured geographic discrimination by content providers, uncovered vulnerabilities in widespread Internet protocols, and worked to prevent HTTPS certificate misissuance. I am also interested in answering questions about practical properties of privacy systems and understanding the concrete improvement in security that different practices achieve.

## Publications

**Running Refraction Networking for Real**  
**Benjamin VanderSloot**, Sergey Frolov, Jack Wampler, Sze Chuen Tan, Irv Simpson, Michalis Kallitsis, J. Alex Halderman, Nikita Borisov, Eric Wustrow  
In *Proceedings on Privacy Enhancing Technology (PoPET'20)*, July 2020.

**Beyond Acceptable Advertisement: Better Understanding Blocking Extensions**  
**Benjamin VanderSloot**, Steven Sprecher, J. Alex Halderman  
*Technical Report*, December 2019.

### **403 Forbidden: A Global View of CDN Geoblocking**

Allison McDonald, Matthew Bernhard, Luke Valenta, **Benjamin VanderSloot**, Will Scott, Nick Sullivan, J. Alex Halderman, Roya Ensafi  
In *Proceedings of the ACM Internet Measurement Conference (IMC'18)*, November 2018.

### **Quack: Scalable Remote Measurement of Application-Layer Censorship**

**Benjamin VanderSloot**, Allison McDonald, Will Scott, J. Alex Halderman, Roya Ensafi  
In *Proceedings of the USENIX Security Symposium (Sec'18)*, July 2018.

### **An ISP-Scale Deployment of TapDance**

Sergey Frolov, Fred Douglas, Will Scott, Allison McDonald, **Benjamin VanderSloot**, Rod Hynes, Adam Kruger, Michalis Kallitsis, David G. Robinson, Steve Schultze, Nikita Borisov, J. Alex Halderman, and Eric Wustrow  
In *Proceedings of the USENIX Workshop on Free and Open Communications on the Internet (FOCI'17)*, August 2017.

### **A Security Analysis of Police Computer Systems**

**Benjamin VanderSloot**, Stuart Wheaton, and J. Alex Halderman  
In *Proceedings of the IEEE Annual Conference on Privacy, Security, and Trust (PST'17)*, December 2017.

### **Towards a Complete View of the Certificate Ecosystem**

**Benjamin VanderSloot**, Johanna Amann, Matthew Bernhard, Zakir Durumeric, Michael Bailey, J. Alex Halderman  
In *Proceedings of the ACM Internet Measurement Conference (IMC'16)*, November 2016.

### **DDoScoin: Cryptocurrency with a Malicious Proof-of-Work**

Eric Wustrow and **Benjamin VanderSloot**  
In *Proceedings of the USENIX Workshop on Offensive Technologies (WOOT'16)*, August 2016.

### **Imperfect Forward Secrecy: How Diffie-Hellman Fails in Practice**

David Adrian, Karthikeyan Bhargavan, Zakir Durumeric, Pierrick Gaudry, Matthew Green, J. Alex Halderman, Nadia Heninger, Drew Springall, Emmanuel Thome, Luke Valenta, **Benjamin VanderSloot**, Eric Wustrow, Santiago Zanella-Beguelin, and Paul Zimmermann  
In *Proceedings of the ACM Conference on Computer and Communications Security (CCS'15)*, October 2015.

—**Best Paper Award**

## **A Memory Rename Table to Reduce Energy and Improve Performance**

Joseph Pusdesris, **Benjamin VanderSloot**, Trevor Mudge

In *Proceedings of the ACM/IEEE International Symposium on Low Power Electronics and Design*

(ISLPED'14), August 2014.

## **Teaching**

### **Teaching Philosophy**

To be an effective teacher you need to provide significance beyond transactional grading.

### **Assistant Professor, Software Project Management (Fall 2020)**

CSSE 4570/5570, *University of Detroit Mercy*

Developed upper-level elective for small course.

### **Assistant Professor, Web Technology (Fall 2020)**

CSSE 4440/5440, *University of Detroit Mercy*

Developed upper-level elective for small course.

### **Lecturer, Introduction to Computer Security (Winter 2018)**

EECS 388, *University of Michigan*

One of three instructors for a 380 student course. Delivered lectures, held office hours, and deployed improvements to this long-standing course.

### **Graduate Student Instructor, Introduction to Computer Security (Fall 2017)**

EECS 388, *University of Michigan*

Delivered binary exploitation and control flow integrity lectures, conducted weekly discussion sections, held office hours, and released and graded multiple projects and homeworks.

### **Guest Lecturer, Introduction to Computer Security (Winter 2016)**

EECS 388, *University of Michigan*

Delivered lectures on physical security and Cyberconfilict from an international policy perspective.

### **Guest Lecturer, Computer and Network Security (Fall 2015)**

EECS 588, *University of Michigan*

Delivered a lecture on cryptography fundamentals to provide background for systems security

## **Mentorship**

### **Jenna Schwartz (Winter 2019)**

Improving server security for tech startups using the SSH bastion model

*Engineering Honors Capstone, University of Michigan*

## **Broader Impact**

**New Methods for Censorship Measurement** (2018)

Censored Planet is a project that monitors censorship globally using existing Internet infrastructure, without coordinating volunteers in-country. We developed a new technique to monitor application-layer censorship. The project has observed changes in censorship practices around geopolitical events.

**Continuous Deployment of Anticensorship Tools** (2018)

Decoy Routing techniques are a fundamentally different form of censorship circumvention that were initially developed in 2011. However, they require ISPs to deploy hardware on their network. We have an ongoing deployment in a partner ISP that provides open Internet access to users in censored countries.

**Honors and Awards**

**NSF Graduate Research Fellowship, Honorable Mention (2016)** for research in measuring cryptographic vulnerabilities in network traffic

**Best Paper of CCS 2015** for “Imperfect Forward Secret: How Diffie-Hellman Fails in Practice”

**2015 Most Innovative Research Pwnie** for “Imperfect Forward Secret: How Diffie-Hellman Fails in Practice”

**Rackham Merit Fellowship (2015)**

**Invited Talks**

**Censored Planet: Measuring Internet Censorship Globally and Continuously** at 2018 International Conference on Cyber Security (ICCS'18), January 2018.

**Professional Service**

**Shadow Reviewer**

— ACM Internet Measurement Conference (IMC) 2018

**External Reviewer**

— ACM Internet Measurement Conference (IMC) 2019

— USENIX Security Symposium (Security) 2019

— ACM Conference on Computer and Communications Security (CCS) 2017

— Internet Society Network and Distributed System Security Symposium (NDSS) 2017

**University Service**

Tor Exit Node Operator, May 2018 – present

Vice President and Treasurer, Computer Science and Engineering Graduate student organization, University of Michigan, May 2016 – May 2017

Dissonance Speaker Series, Founding Committee Member

Chapter President, Eta Kappa Nu (IEEE Honor Society), May 2014 – December 2014

**Patents** United States Patent No. 9,471,480 for Data processing apparatus with memory rename table for mapping memory addresses to registers.

**Internships** *Microsoft, Windows OS Services Group* — SDE Intern (2014)  
Designed redundant storage layer for reliability in memcached-like service

*Qualcomm Incorporated, Windows 8 Group* — Software Engineer Intern (2012)  
Designed a new fuzzing framework for GUI-driven applications

**References** **Roya Ensafi**  
Assistant Professor, University of Michigan

**J. Alex Halderman**  
Professor, University of Michigan

**Peter Honeyman**  
Research Professor and Lecturer, University of Michigan