

Alexander Marder, PhD

Assistant Professor of Computer Science

Johns Hopkins University
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EDUCATION

- Ph.D.** University of Pennsylvania December 2019
PhD Computer and Information Sciences
Thesis: “Sharp Snapshots of the Internet’s Graph with HONE”
Advisor: Jonathan M. Smith, PhD
- M.S.** University of Pennsylvania May 2014
Computer and Information Sciences
- B.S.** Brandeis University May 2012
BS Computer Science
Thesis: “Course Recommender System”
Advisor: Timothy J. Hickey

FUNDING

AVOID 5G: Automatic Verification of Internet Data-Paths for 5G

PI with Erik Kline (USC ISI), Ricky Mok (CAIDA), kc claffy (CAIDA), and Kyle Jamieson (Princeton)
NSF Convergence Accelerator 2023 Joint NSF/DOD Phase 2 for Track G, \$5,000,000
September 2023 – August 2025

Detection and Analysis of Infrastructure Bottlenecks in a Cloud-Centric Internet

Co-PI with Ricky Mok and kc claffy
NSF CNS Core Medium, \$1,200,000
October 2022 – September 2025

5G Traffic Sovereignty: Operating Through an Adversarial Internet

PI with Ricky Mok and kc claffy
NSF Convergence Accelerator 2022 Joint NSF/DOD Phase 1 for Track G, \$750,000
July 2022 – June 2023

Measurement Capabilities for the Modern Internet

PI
NSF CRII, \$175,000
May 2021 – May 2023

PROFESSIONAL EXPERIENCE

- Assistant Professor** July 2023 – Present
Department of Computer Science

Alexander Marder, Ph.D.

Institute for Assured Autonomy
Johns Hopkins University
Baltimore, Maryland

Assistant Research Scientist

November 2020 – June 2023

CAIDA
University of California, San Diego
La Jolla, California

Postdoctoral Fellow

September 2019 – October 2020

Mentors: kc claffy and Alex C. Snoeren
CAIDA
University of California, San Diego
La Jolla, California

Research Assistant

August 2014 – August 2019

Advisor: Jonathan M. Smith
Department of Computer and Information Sciences
University of Pennsylvania
Philadelphia, PA

PUBLICATIONS

Bradley Huffaker, Romain Fontugne, **Alexander Marder**, kc claffy. “On the Importance of Being and AS: An Approach to Country-Level AS Rankings” *Internet Measurement Conference*. 2023. [long]

Thomas Krenc, Matthew Luckie, **Alexander Marder**, kc claffy. “Coarse-grained Inference of BGP Community Intent” *Internet Measurement Conference*. 2023. [short]

Alexander Marder, Zesen Zhang, Ricky Mok, Ramakrishna Padmanabhan, Bradley Huffaker, Matthew Luckie, Alberto Dainotti, kc claffy, Alex C. Snoeren, Aaron Schulman. “Access Denied: Assessing Physical Risks to Internet Access Networks” *Usenix Security*. 2023.

Ben Du, Gautam Akiwate, Thomas Krenc, Cecilia Testart, **Alexander Marder**, Bradley Huffaker, Alex C. Snoeren, and kc claffy. “IRR Hygiene in the RPKI Era” *Passive and Active Measurement Conference*. 2022.

Matthew Luckie, **Alexander Marder**, Bradley Huffaker, and kc claffy. “Learning Regexes to Extract Network Names from Hostnames” *Asian Internet Engineering Conference*. 2021.

Matthew Luckie, Bradley Huffaker, **Alexander Marder**, Zachary Bischof, and kc claffy. “Learning to Extract Geographic Information from Internet Router Hostnames” *Conference on emerging Networking EXperiments and Technologies (CoNEXT)*. 2021

Zesen Zhang, **Alexander Marder**, Ricky Mok, Bradley Huffaker, Matthew Luckie, kc claffy, and Aaron Schulman. “Inferring Regional Access Network Topologies: Methods and Applications” *Internet Measurement Conference*. 2021. [long]

Alexander Marder, kc claffy, Alex C. Snoeren. “Inferring Cloud Interconnections: Validation, Geolocation, and Routing Behavior” *Passive and Active Measurement Conference*. 2021.

Alexander Marder, Ph.D.

Matthew Luckie, **Alexander Marder**, Marianne Fletcher, Bradley Huffaker, kc claffy. “Learning to Extract and Use ASNs in Hostnames” Internet Measurement Conference. 2020. [short]

Alexander Marder. “Alias Pruning by Path Length Estimation (APPLE)” Passive and Active Measurement Conference. 2020.

Alexander Marder, Matthew Luckie, Bradley Huffaker, kc claffy. “vrfinder: Finding Outbound Addresses in Traceroute” SIGMETRICS. 2020.

Alexander Marder, Matthew Luckie, Amogh Dhamdhere, Bradley Huffaker, kc claffy, Jonathan M. Smith. “Pushing the Boundaries with bdrmapIT: Mapping Router Ownership at Internet Scale” Internet Measurement Conference. 2018. [long]

Alexander Marder, Jonathan M. Smith. “MAP-IT: Multipass Accurate Passive Inferences from Traceroute” Internet Measurement Conference. 2016. [long]

INVITED TALKS

“Securing 5G Against the Fragile and Malicious Infrastructure.” IEEE 5G Workshop on First Responder and Tactical Networks. December 2023.

Panelist. French-American Cyber Security Conference. December 2023.

“How do Clouds Use IXPs?” Euro-IX Meeting. December 2020.

PROFESSIONAL SERVICE

National Science Foundation

Proposal Review Panel	2023
Proposal Review Panel	2022

Program Committee

INFOCOM	2023
Internet Measurement Conference	2021
Passive and Active Measurement Conference	2020