Thomas (Tom) Koch
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EDUCATION:

Columbia University New York, NY
PhD, Electrical Engineering, May 2024. Advisor: Ethan Katz-Bassett
The Cooper Union for the Advancement of Science and Art New York, NY
Master of Engineering, Electrical Engineering, May 2019. Advisor: Fred Fontaine
The Cooper Union for the Advancement of Science and Art New York, NY
Bachelor of Engineering (summa cum laude) with Math Minor, Electrical Engineering, May 2018

PUBLICATIONS:

PAINTER: Ingress Traffic Engineering and Routing for Enterprise Cloud Networks. **Tom Koch**; Shuyue Yu; Sharad Agarwal; Ryan Beckett; Ethan Katz-Bassett.
Proceedings of the ACM SIGCOMM Conference, 2023.

Anycast in Context: A Tale of Two Systems. **Tom Koch**; Ke Li; Calvin Ardi; Matt Calder; John Heidemann; Ethan Katz-Bassett.
Proceedings of the ACM SIGCOMM Conference, 2021.

Towards a Traffic Map of the Internet. **Tom Koch**; Weifan Jiang; Tao Luo; Petros Gigis; Kevin Vermeulen; Emile Aben; Matt Calder; Ethan Katz-Bassett; Lefteris Manassakis; Georgios Smaragdakis; Narseo Vallina-Rodriguez.
Proceedings of the ACM Workshop on Hot Topics in Networks (HotNets), 2021.

Towards Identifying Networks with Internet Clients using Public Data. Weifan Jian; Tao Luo; **Tom Koch**; Ethan Katz-Bassett; Matt Calder.
Proceedings of the ACM Internet Measurement Conference (IMC), 2021.

Measuring the Network Performance of Google Cloud Platform. Ricky Mok; Hongyu Zou; Rui Yang; **Tom Koch**; Ethan Katz-Bassett.
Proceedings of the ACM Internet Measurement Conference (IMC), 2021.

Reduce, Reuse, Recycle: Repurposing Existing Measurements to Identify Stale Traceroutes
Vasileios Giotsas; **Tom Koch**; Elverton Fazzion and Italo Cunha; Matt Calder; Harsha V. Madhyastha; Ethan Katz-Bassett.
Proceedings of the ACM Internet Measurement Conference (IMC), 2020.

WORK EXPERIENCE:

Software Engineer, Google Cloud, New York City NY *Fall 2024-Present*
- Engineered tests and designs for the Fabric Border Router team, an integral part of Google's Jupiter network.

Research Intern, Azure for Operators, Redmond WA *Spring 2021*
- Led a research project which investigated optimization of paths from users to Microsoft's global cloud.

Technical Research Intern/Subcontractor, BAE Systems, Burlington MA *2017-2019*
- Developed and deployed algorithms which used machine learning to replace wireless DSP components.
- Researched and developed methods of applying reinforcement learning to dynamic spectrum scanning.

TEACHING EXPERIENCE:

Adjunct Professor CSEE 4119, Columbia University, NY *Fall 2024*
- Sole instructor for course in Computer Networks with 45 undergraduate and graduate students. Topics include the layered model of the Internet, networked applications, and the protocols that enable them.

Adjunct Instructor and Teaching Fellow CSEE 4119, Columbia University, NY *Fall 2023*
- Sole instructor of record for course in Computer Networks with 30 undergraduate and graduate students. Topics include the layered model of the Internet, networked applications, and the protocols that enable them.

Adjunct CoInstructor CSEE 4119, Columbia University, NY *Fall 2022*
- Taught course in Computer Networks to 80 undergraduate and graduate students. Topics include the layered model of the Internet, networked applications, and the protocols that enable them.

Adjunct Instructor MA224, The Cooper Union, NY *2019-2024*
- Sole instructor for courses in Probability Theory and Differential Equations. Class sizes ranged between 10 and 70 students.

Guest Lecture in CSEE4119, Columbia University, NY Spring 2023

Teaching Assistant, Columbia University, NY *Fall 2020*
- Directed a course project, managing grading, rubrics, student questions, and student communications.
- Held office hours where students asked questions about assignments and concepts.

INVITED TALKS:

OARC Conference 35a *September 2021*
- Suggested next steps to operators based on analysis of root DNS routing performance.

PROFESSIONAL SERVICE:

Program Committee and Shadow PC Chair: IMC 2025 *Fall 2024-Spring 2025*

Program Committee: SIGCOMM Posters and Demos *Spring 2024*

Program Committee: TMA Conference *Spring 2024*

External Reviewer: IEEE Communications Magazine *Fall 2023*

IMC 2022 Columbia Shadow PC Chair *Summer 2022*

HONORS AND AWARDS
- Columbia University Department of Engineering Teaching Fellow 2023
- Full Tuition Scholarship 2018
- Harry W. Reddick Medal for excellence in Mathematics 2018
- Tau Beta Pi Scholar 2017
- Half Tuition Scholarship 2014-2018