

Loqman Salamatian

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Education

- Sep. 2020-May 2026 **Columbia University - Ph.D. Candidate in Computer Science, Network and Systems**, with Ethan Katz-Bassett, Vishal Misra and Dan Rubenstein.
- 2018-2020 **Sorbonne Université - Master of Mathematics and Applications**, Campus UPMC.
- 2016-2017 **The University of Hong Kong (HKU) - Bachelor of Mathematics**.
Exchange Semester
- 2015-2017 **Université du Luxembourg - Bachelor of Mathematics**.
Graduation June 2017 with Honors (Mention Bien)
- 2014-2015 **École Polytechnique Fédérale de Lausanne (EPFL) - Bachelor of Mathematics**.
Validation of the Propédeutique Year

Research Experience

- Jun. 2018 – Present **Research Associate**, Géode Research Center.
Cyber-Strategy, BGP, Geopolitics, Geography of Cyberspace, Visualization
- Jun. 2024 – Dec. 2024 **Student Researcher (hosted by Phillipa Gill)**, Google.
Internet Measurement
- Sep. 2020 – Jan. 2021 **Case Officer - Data Scientist**, Cyber Peace Institute.
Data Science, Network Forensics
- Jun. 2019 – Sep. 2019 **Research Intern (hosted by Alberto Dainotti)**, UCSD – CAIDA.
Topology Analysis, BGP, Internet Measurement, Mathematical Modeling
- Sep. 2017 – Jun. 2018 **Research Intern (hosted by Dali Kaafar)**, CSIRO, Sydney, Australia.
Privacy, BGP, Network Theory, Discrete Geometry, Ricci Curvature, Complex Networks
- Jan. 2017 – Jun. 2017 **Research Intern (hosted by German Castigniani)**, SNT, Luxembourg City, Luxembourg.
Autonomous Driving, Pattern Recognition, Statistical Machine Learning
- May 2016 – Sep. 2016 **Research Intern (hosted by Sue Moon)**, KAIST UNIVERSITY, Daejeon, Korea.
Game Theory, Mean-Field Analysis, Cyber-Insurance

Teaching

- Jan. 2021 - 2× **Course Assistant for CSEW6180**, Professor : Vishal Misra, **Modeling Performance Evaluation**, Grading, Writing Homeworks.

Grants and Fellowships Awarded

- Sept 2023 **Best of CCR**.
- Aug 2023 **Research Highlight in Communications of ACM**.
- Oct. 2022 **ACM IMC Travel Grant**, Nice - France.

- July 2022 **ACM Sigmetrics Travel Grant**, Mumbai - India.
- April 2021 **RACI Grant - RIPE**, *Mapping Connectivity and the Digital Space in Central Asia*, with Louis Pétiniaud and Kévin Limonier.
https://labs.ripe.net/author/gergana_petrova/raci-funding-in-2021-planning-and-project
- Sept. 2020 **Columbia**, *Dean's Fellowship*, awarded for a year.
<https://www.cs.columbia.edu/2020/students-with-fellowships-2020/>
- Dec. 2019 **Web Mapping Challenge SYNAPSE**, *Intelligence Campus Challenge Grant*, **Laureate with Cassini**, with Kévin Limonier, David Ansellem, Kavé Salamatian, Frédéric Douzet.
<https://www.defense.gouv.fr/actualites/challenge-synapse-deux-laureats>
- April 2019 **RACI Grant - RIPE**, *Geopolitics of routing, What RIPE tells us of geography and power : a methodological approach (Post Soviet Case Studies)*, RIPE NCC Days Moscow and MENOG Beyrouth, with Louis Pétiniaud.

Publications

Conference

- 2025 *The Internet as Sisyphus : Repeating Measurements, Missing Causes* — Loqman Salamatian. Published in **ACM HotNets 2025**.
- 2025 *A Breath of Fresh Air : Visualizing How Networks “Breathe”* — Stephen Jasina, Loqman Salamatian, Paul Barford, Mark Crovella, Walter Willinger. Published in **ACM HotNets 2025**.
- 2025 *Unveiling and Engaging with the Humans of Networking Research* — Nova Ahmed, Laura Gazda, Eric Greenlee, Shellby Hagemann, Kurtis Heimerl, Esther Jang, Fernanda Rosa, Loqman Salamatian, Jason Young (by alphabetical order). Published in **ACM HotNets 2025**.
- 2024 *Toward Applying Quantum Computing to Network Verification* — Kahlil Dozier, Justin Beltran, Kylie Berg, Hugo Matousek, Loqman Salamatian, Ethan Katz-Bassett, Dan Rubenstein. Published in **ACM HotNets 2024**.
- 2024 *What’s in the Dataset ? Unboxing the APNIC User Populations* — Loqman Salamatian, Todd Arnold, Vasilis Giotsas, Calvin Ardi, Matt Calder. Published in **ACM IMC 2024**.
- 2024 *MetaScritic : Reframing AS-Level Topology Discovery as a Recommendation System* — Loqman Salamatian, Kevin Vermeulen, Italo Cunha, Vasilis Giotsas, Ethan Katz-Bassett. Published in **ACM IMC 2024**.
- 2024 *Analysis of False Negative Rates for Recycling Bloom Filters (Yes, They Happen !)* — Kahlil Dozier, Loqman Salamatian, Dan Rubenstein. Published in **ACM SIGMETRICS 2024**.
- 2024 *Modeling Average False Positive Rates of Recycling Bloom Filters* — Kahlil Dozier, Loqman Salamatian, Dan Rubenstein. Accepted at **IEEE INFOCOM 2024**.
- 2023 *The Central Problem with Distributed Content : Common CDN Deployments Centralize Traffic in a Risky Way* — Kevin Vermeulen, Loqman Salamatian, Sang Hoon Kim, Matt Calder, Ethan Katz-Bassett. Published in **ACM HotNets 2023**.
- 2023 *Who are the IPv4 Squatters ?* — Loqman Salamatian, Jiangchen Zhu, Todd Arnold, Italo Cunha, Ethan Katz-Bassett, Matt Calder. Published in **ACM SIGCOMM CCR 2023**. 
- 2023 *A Manifold View of Connectivity in the Private Backbone Networks of Hyperscalers* — Loqman Salamatian, Scott Anderson, Joshua Matthews, Paul Barford, Mark Crovella, Walter Willinger. Published in **Communications of the ACM**.
- 2022 *iGDB : Connecting the Physical and Logical Layers of the Internet* — Scott Anderson, Loqman Salamatian, Zachary Bischof, Alberto Dainotti, Paul Barford. Published in **ACM IMC 2022**.

- 2022 *Curvature-based Analysis of Network Connectivity in Private Backbone Infrastructures* — Loqman Salamatian, Scott Anderson, Joshua Matthews, Paul Barford, Mark Crovella, Walter Willinger. Published in **ACM SIGMETRICS 2022**.  **Selected as a Research Highlight in Communications of the ACM.**
- 2020 *Measuring the Fragmentation of the Internet : The Case of the Border Gateway Protocol (BGP) during the Ukrainian Crisis* — Frédéric Douzet, Louis Pétiniaud, Loqman Salamatian, Kévin Limonier, Kavé Salamatian. Published in **IEEE CyCon 2020**.
- 2019 *Développer une approche géopolitique via le numérique : le cas de l'influence médiatique russe sur le segment francophone de Twitter* — Colin Gérard, Guillhem Marotte, Loqman Salamatian. Published in **Espace Politique**.
- 2019 *Une approche géopolitique du routage des données : le rôle de la topologie d'Internet dans les territoires en conflit en Ukraine* — Louis Pétiniaud, Loqman Salamatian. Published in **Espace Politique**.

Journal

- 2021 *Mapping the routes of the Internet for geopolitics : The case of Eastern Ukraine*. - Kévin Limonier, Frédéric Douzet, Louis Pétiniaud, Loqman Salamatian and Kavé Salamatian. Published in **First Monday**
- 2019 *The Geopolitics Behind the Routes Data Travel : A Case Study of Iran* - Loqman Salamatian, Frédéric Douzet, Kavé Salamatian, Kévin Limonier. Published in **Journal of Cybersecurity**.

Pre-print

- 2025 *CDN-scale detection of large shared IP addresses* — Vasilis Giotsas, Loqman Salamatian, Marwan Fayed. In preparation for **ACM IMC 2026**.
- 2025 *The Roads Not Taken : A Study in Facility and Peering Selection (FROST)* — Loqman Salamatian, Dan Rubenstein, Vishal Misra, Ethan Katz-Bassett. In preparation for **ACM SIGMETRICS 2026**.
- 2025 *HERMES : Repurposing User-Driven Speed Tests to Monitor the Internet* — Loqman Salamatian, Kevin Vermeulen, Dave Choffnes, Ethan Katz-Bassett, Phillipa Gill. Submitted at **USENIX NSDI 2026**.
- 2025 *Matisse : Visualizing Measured Internet Latencies as Manifolds* — Stephen Jasina, Loqman Salamatian, Scott Anderson, Paul Barford, Mark Crovella, Walter Willinger. Submitted at **PAM 2025**.
- 2025 *Combating Measurements-Driven Reconnaissance via Optical Topology Programming* - Matt Hall, Loqman Salamatian, Ram Durairajan. Submitted at **PAM 2025**.
- 2020 *Mapping the International Frontiers of the Internet* - Loqman Salamatian, Paul Barford, Alberto Dainotti
- 2018 *Monitoring the Internet through Riemannian Geometry* — Loqman Salamatian, Dali Kaafar, Kavé Salamatian. ArXived in 2018.

Invited Talks

- Sep. 2025 **Stanford, Models and Systems for Making the Internet Observable.**
- May 2025 **M-Lab/Google, HERMES : Repurposing User-Driven Speed Tests to Monitor the Internet.**
- Jan. 2022 **Columbia Systems Seminar/Google, Curvature-based Analysis of Network Connectivity in Private Backbone Infrastructures.**
- 2022
- Aug. 2021 **34th International Geographical Congress (IGC 2020), The journey, not the destination matters : untangling data and sovereignty in the Far West with Louis Pétiniaud & On a collaborative effort to map the Internet with Louis Pétiniaud.**
- June 2020 **American Political Science Association - Democracy, Difference and Destabilization (APSA), Mapping the Dissemination of Russian Narratives on Social Networks in France.**

- Oct. 2019 **International Workshop : Internet, Digital Data, Power and Rivalries in the Post-Soviet Area**, *Discussant in the Panel : The routes of the post-soviet Internet : protocols, measurements and cartography.*
- July 2019 **15ème Congrès de l'Association Française de Science Politique** ; *Les ruses numériques dans les couches basses du réseau : les usages du Border Gateway Protocol dans les conflits territoriaux.*
- June 2019 **Oxford Life Connected Life Conference**, *The geopolitics behind the routes data travel : a case study of Iran*, London, Oxford.
https://connectedlife.oi.ox.ac.uk/wp-content/themes/oiwebtheme-connectedlife/archived-site/blogs.oi.ox.ac.uk/connectedlife/cl_programme/index.html

Services

- 2025 **Non-paper Session Organizer : Internet Visualization Exhibit (IVE)**, ACM SIGCOMM'25, with Paul Barford.
- 2025 **Shadow PC Member**, ACM IMC'25.
- 2025 **Hackathon Co-Organizer**, ACM IMC'25.
- 2022 **Shadow PC Member — Columbia**, ACM IMC'22.

Press and Blog

- May 2025 **M-Lab**, *How M-Lab Determines User Location and Selects Servers* , <https://www.measurementlab.net/blog/improving-m-lab-geolocation/>.
- March 2025 **Pulse Blog**, *Visualizing The Rise of Hypergiants*, <https://pulse.internetsociety.org/blog/visualizing-the-rise-of-hypergiants>.
- May 2022 **Financial Times**, *Russian forces usurp Ukrainian internet infrastructure in Donbas*, <https://www.ft.com/content/969ac0a8-c0bf-4114-9029-7f75e7895845>.
- Jan 2022 **Medium Blog**, *Dynamic Visualization and Analytics for Cybersecurity — Project Genesis*, <https://medium.com/kineviz/dynamic-visualization-and-analytics-for-cybersecurity-project-genesis-2279e8c16e1a>.
- Nov. 2019 **Le Monde**, *Internet coupé en Iran : « Le niveau de sophistication de ce blocage est une première »* , https://www.lemonde.fr/pixels/article/2019/11/20/internet-coupe-en-iran-le-niveau-de-sophistication-de-ce-blocage-est-une-premiere_6019883_4408996.html.
- July 2018 **Le Monde**, *Cyberespace : la guerre mondiale des données*, https://www.lemonde.fr/international/visuel/2018/07/23/cyberespace-la-guerre-mondiale-des-donnees_5334901_3210.html?.

References

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