

Loqman Salamatian

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Education

- Fall 2020- **Columbia University - Ph.D. candidate in Computer Science, Network and Systems**, with Ethan Katz-Bassett, Vishal Misra and Daniel Rubenstein.
- 2018-2020 **Sorbonne Université - Master of Mathematics and Applications**, Campus UPMC.
- 2016-2017 **Hong Kong University - 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 - Bachelor of Mathematics**.
Validation of the Propédeutique year
- 2013 **International Option Baccalaureate in Science and Mathematics**.
Lycée International de Ferney-Voltaire
With Honors (Mention Bien)

Experience

- Sept 2020 - **Data Scientist in the Analysis Group**, Cyber Peace Institute.
- January 2021 Data Science, Network Forensics, Internet Measurement
- June 2019 - **Research Internship with Alberto Dainotti, UCSD - CAIDA**.
- Sept. 2019 Topology Analysis, BGP, Internet Measurement, Mathematical Model
- June 2018 - **Researcher**, Géode Research Center.
- Present Cyber-strategy, BGP, Geopolitics, Geography of Cyber-Space, Visualization
- Sept. 2017 - **Research Associate supervised by Dali Kaafar, CSIRO Sydney, Australia**.
- June 2018 Privacy, BGP, Network Theory, Discrete Geometry, Ricci Curvature, Complex Networks
- Jan. 2017 - **Research Associate supervised by German Castigniani, SNT Luxembourg City, Luxembourg**.
- June 2017 Autonomous driver, Pattern recognition, Statistical Machine Learning
- May 2016- **Internship supervised by Sue Moon, KAIST UNIVERSITY Daejeon, Korea**.
- Sept. 2016 Game Theory, Mean-Field Analysis, Cyber-Insurance
- May 2014 - **Research officer, Analysis**.
- Sept. 2014 Société Européenne de l'Internet. Redaction, edition and publication on the blog "Lois des réseaux" on lemonde.fr



Technical skills

- Programming SQL, C++, Python, Tensorflow, Camel, R, QGIS, Adobe Illustrator, L^AT_EX
- Language Native in French and Farsi, C2 in English, B1 in German
- Theoretical Riemannian Geometry, Ricci Flow, Optimal Transport, Network Theory, Operational Research, Information Theory, Machine Learning, Deep Learning, Bayesian Statistics, Algebraic Topology, Curvature, Geometrical Graph Theory, Network Topology, Complex Network Modeling, Game Theory, Internet Measurement, GIS, Queuing Theory, Advanced Probability

Presentations

- April 2022 **Google**, *Curvature-based Analysis of Network Connectivity in Private Backbone Infrastructures*, Virtual.

- August 2021 **34th International Geographical Congress (IGC 2020)**, *The journey, not the destination matters : untangling data and sovereignty in the Far West with Louis Pétiinaud & On a collaborative effort to map the Internet with Louis Pétiinaud*, Virtual.
- June 2020 **American Political Science Association - Democracy, Difference and Destabilization (APSA)**, *Mapping the Dissemination of Russian Narratives on Social Networks in France*, Virtual.
- January 2020 **Forum International de la Cybersécurité**, *BGP : protocole technique, outil politique - facteur politique de l'infrastructure*, Lille.
- October 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*, Paris.
- 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*, Bordeaux.
- June 2019 **Oxford Life Connected Life Conference**, *The geopolitics behind the routes data travel : a case study of Iran*, London and Oxford.
https://connectedlife.oii.ox.ac.uk/wp-content/themes/oiiwebtheme-connectedlife/archived-site/blogs.oii.ox.ac.uk/connectedlife/cl_programme/index.html

Grants and Fellowships Awarded :

- 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 Pétiinaud.
- 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>
- Sept. 2020 **Columbia**, *Dean's Fellowship*, awarded for a year.
<https://www.cs.columbia.edu/2020/students-with-fellowships-2020/>
- April 2021 **RACI Grant - RIPE**, *Mapping Connectivity and the Digital Space in Central Asia*, with Louis Pétiinaud and Kévin Limonier.
https://labs.ripe.net/author/gergana_petrova/raci-funding-in-2021-planning-and-projects/

Pre-prints and publications in English :

- 2018 Monitoring the Internet through Riemannian Geometry with Dali Kaafar and Kave Salamatian (**First author**)
- 2019 The geopolitics behind the routes data travel : a case study of Iran with Frédéric Douzer, with Kavé Salamatian and Kévin Limonier (**First author**) *Published in Journal of Cybersecurity*
- 2019 Geopolitics of Routing with Louis Pétiinaud *Published in RIPE Labs*
- 2020 Measuring the fragmentation of the Internet : the case of the Border Gateway Protocol (BGP) during the Ukrainian crisis written with Frédéric Douzet Louis Pétiinaud, Kévin Limonier and Kavé Salamatian (**Third Author**) *Published in 2020 12th Internal Conference on Cyber Conflict Proceedings*
- 2021 Curvature-based Analysis of Network Connectivity in Private Backbone Infrastructures with Scott Anderson, Joshua Matthews, Paul Barford, Mark Crovella and Walter Willinger (**First Author**) *Published at Sigmetrics 2022*
- 2021 Who are the IPv4 Squatters? with Jiangchen Zhu, Todd Arnold, Italo Cunha, Ethan Katz-Bassett and Matt Calder (**First Author**) *Submitted at Sigcomm Computer Communication Review*
- 2022 Matisse : Visualizing Measured Internet Latencies as Manifolds with Joshua Matthews, Scott Anderson, Mark Crovella, Walter Willinger and Paul Barford (**Second Author**) *Submitted at IEEE Visualization 2022*
- 2022 iGDB : Connecting the Physical and Logical Layers of the Internet with Scott Anderson, Zachary Bischof, Alberto Dainotti and Paul Barford (**Second Author**) *Accepted at IMC 2022*
- 2022 A Manifold View of Connectivity in the Private Backbone Networks of Hyperscalers with Scott Anderson, Joshua Matthews, Paul Barford, Mark Crovella and Walter Willinger) *Accepted at CACM Research Highlights*

Pre-prints and publications in French :

- 2019 Développer une approche géopolitique via le numérique : le cas de l'influence médiatique russe sur le segment francophone de Twitter. with Colin Gérard, Guilhem Marotte (**Third author**) *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 with Louis Pétiinaud (**Second Author**) *Published at Espace Politique*

Teaching

Jan. 2020 **Course Assistant for CSEEW6180**, *Professor : Vishal Misra*, **Modeling Performance Evaluation**, Grading, Writing Homeworks and Finals, Recitations.

Mention in Press and Blog

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?

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.

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>.

May 2022 **Financial Times**, *Russian forces usurp Ukrainian internet infrastructure in Donbas*, <https://www.ft.com/content/969ac0a8-c0bf-4114-9029-7f75e7895845>.