

Gabriel Agostini

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EDUCATION

Cornell University , Cornell Tech <i>PhD in Information Science</i> Advisors: Emma Pierson & Nikhil Garg	2022 - present
Columbia University , Columbia College <i>Bachelor of Arts in Urban Studies</i> GPA: 4.06/4.00	2021 - 2022
Columbia University , School of Engineering and Applied Sciences <i>Bachelor of Science in Applied Mathematics</i> GPA: 4.17/4.00	2017 - 2021
Budapest Semesters in Mathematics <i>Study abroad program</i>	2020

PUBLICATIONS

Gabriel Agostini, Emma Pierson, Nikhil Garg. "[A Bayesian Spatial Model to Correct Under-Reporting in Urban Crowdsourcing](#)." *38th Annual AAAI Conference on Artificial Intelligence (AAAI24)*. **Oral presentation**. 2024.

Rajiv Movva*, Sidhika Balachandar*, Kenny Peng*, **Gabriel Agostini***, Nikhil Garg, Emma Pierson. "[Topics, Authors, and Networks in Large Language Model Research: Trends from a Survey of 17K arXiv Papers](#)." *Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*. 2024

Gabriel Agostini, Juliana Gonçalves, Trivik Verma. "[Identifying Urban Morphology from Street Networks with Graphlet Analysis](#)." *30th Annual Geographical Information Science Research UK (GISRUK)*, Liverpool, United Kingdom. April 1, 2022.

Gabriel Agostini, Yushan Zhang, Debra Laefer. "[A Category-Theory Approach to Construction Ontologies in Subsurface Mass Transit](#)." *International Archives of Photogrammetry, Remote Sensing, and Spatial Information Sciences*, XLVI-4/W4-2021, 125–130, 2021.

IN PREPARATION

Gabriel Agostini, Rachel Young, Maria Fitzpatrick, Nikhil Garg, Emma Pierson. "Inferring Fine-Grained Migration Patterns in the United States." Target venue: *Nature Human Behavior*.

Talia Kaufmann*, **Gabriel Agostini***, Trivik Verma, Dan O'Brien. "Inequality in mobility patterns: reconciling access and travel in American cities." Target venue: *Environment and Planning B*.

RESEARCH EXPERIENCE

Centre for Urban Science and Policy <i>TU Delft University</i> Advisor: Prof. Trivik Verma	May 2020 - December 2022
Urban Modeling Group <i>Center for Urban Science and Progress, NYU</i> Advisor: Prof. Debra Laefer	May 2020 - August 2021
Columbia Mathematics Research Experience for Undergraduates <i>Columbia University</i> Advisor: Prof. Kyle Hayden	May 2019 - August 2019

RESEARCH PARTNERSHIPS

Stanford & San Francisco Unified School District Partnership

June 2021 - December 2021

*Stanford University | Advisor: **Prof. Irene Lo***

- Designed algorithms to ensure equal access to education for underserved students in San Francisco.
- Employed spatial analysis techniques to identify geographical proxies for educational barriers.
- Worked iteratively alongside policymakers to communicate decisions and update research goals.

PRESENTATIONS

A Bayesian Spatial Model to Correct Under-Reporting in Urban Crowdsourcing

January 2024

AAAI24 Conference. AI for Social Impact: Urban Planning.

Identifying Urban Morphology from Street Networks with Graphlet Analysis, [video link](#)

April 2022

GISRUUK Conference

A Category-Theory Approach to Construction Ontologies in Subsurface Mass Transit

October 2021

3D GeoInfo Conference

Operationalizing Equity in the San Francisco Student School Assignment, [video link](#)

August 2021

Stanford Data Science for Social Good

Knot Surgery and Integer Characterizing Slopes, [video link](#)

August 2019

Columbia University Mathematics Department

TEACHING EXPERIENCE & STEM OUTREACH

Cornell Tech, Teaching Assistant

Fall 2022, Fall 2023, Spring 2024

Courses: Applied Data Science, Fairness in Machine Learning Algorithms

Columbia University Mathematics Department, Teaching Assistant

Spring 2019 - Spring 2022

Courses: Multivariable Calculus, Linear Algebra, Ordinary Differential Equations

Fênix Pré-Vestibulares, Mathematics Instructor

Summer 2018

- Planned and ran over 50 hours of high-school content Mathematics lessons.
- Designed problem sets focused on Brazilian college entrance exams.
- Enhanced the outreach of Mathematics education to students from the public school system

SERVICE & LEADERSHIP

Urban Data Science + Equity EAAMO-Bridges Working Group, Organizer

August 2024 - Present

Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO)

AAAI Conference on Artificial Intelligence, Reviewer

August 2023 - Present

Association for the Advancement of Artificial Intelligence (AAAI)

International Student Advisory Board, Social Media Chair

May 2018 - May 2021

Columbia University Multicultural Affairs

FUNDING AWARDS

Queer in AI Grad Application Aid <i>Out in STEM and Queer in AI</i>	Fall 2021
Stanford Data Science for Social Good Fellowship <i>Stanford Data Science Institute</i>	Summer 2021
Work Exemption Program <i>Columbia University Center for Career Education</i>	Summer 2021, Fall 2021
Tandon Undergraduate Summer Research Program <i>New York University Tandon School of Engineering</i>	Summer 2020
Columbia University Summer Fellowship <i>Columbia University Center for Career Education</i>	Summer 2020, 2021

HONORS

Phi Beta Kappa Membership <i>Columbia College</i>	May 2022
Summa Cum Laude <i>Columbia College</i>	May 2022
Summa Cum Laude <i>Columbia University School of Engineering and Applied Sciences</i>	May 2021

RELEVANT COURSEWORK

<i>Analysis & Topology</i>	Real Analysis (A), Measure Theory (A+), Complex Analysis (A+), Functional Analysis (A) ODEs (A+), PDEs (A+), Dynamical Systems (A+), Topology (A+)
<i>Algebra</i>	Linear Algebra (A+), Abstract Algebra I (A), Abstract Algebra II (A+)
<i>Statistics</i>	Probability Theory (A), Stochastic Processes (A+), Time Series Analysis (A+) Statistical Inference (A+), Multivariate Statistics (A), Sample Surveys (A)
<i>Network Science</i>	Graph Theory (A+), Spectral Theory of Graphs and Groups (A+), Structure of Complex Networks (A+), Analysis of Networks and Crowds (A)
<i>Machine Learning</i>	Machine Learning (A), Geometric Data Analysis (A)
<i>Urban Studies</i>	Global Urbanism (A), Urban Elsewheres (A), History of the City in Latin America (A) Colonial Cities of the Americas (A), Postwar Fiction and Architecture (A)

SKILLS

<i>Programming</i>	Python (matplotlib, seaborn, scipy, pysal, networkx, geopandas, osmnx, sklearn), R, Stan
<i>Technology</i>	Git, Microsoft Excel, Social Media, LaTeX, ArcGIS, QGIS
<i>Languages</i>	Brazilian Portuguese (native), Italian (advanced), Russian (basic)