

Research maths and governance. Passionate about aligning engineering systems with democratic values.

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## Education

- Sep.19-Aug.23 **MIT** PhD in Social and Engineering Systems and Statistics (GPA: 5/5)  
*Focus Area: Statistical Reinforcement Learning & Decision-Making, Discrete Probabilities & Stochastic Processes, Statistics, Mathematical Models in the Social Sciences, Data-Driven Decision-Making & Society*
- Sep.17-Jun.19 **MIT** MSc in Technology and Policy (GPA: 4.8/5)  
*Focus Area: Statistics Computation & Application, Network Science & Models, Causal Inference, Fundamentals of Probability, Political Economy, Science Technology & Public Policy, Law Technology & Policy*
- Sep.15-Jun.17 **École Centrale Paris** BSc of Engineering & Diplôme d'ingénieur (MSc. equivalent) in Applied Mathematics  
*Focus Area: Mathematics (fundamental and applied), Algorithms & Programming, Machine Learning, Physics*

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## Work Experience

- May.-Aug.22 **Palantir Technologies (NY)** Deployment Strategist Intern
  - Partnered with clients to scope problems and set vision for data-driven workflows in the Utility space
  - Conceived and developed analytical workflows to augment data-driven decisions and product policy design
- Jul.-Aug.19 **Aerospacelab (Belgium)** Strategic Engineer - Machine Learning Consultant
  - Envisioned and coded modules to monitor information virality on social media implementing natural language processing models, network dynamics analyses, time series analyses and other machine learning techniques
- May.-Aug.18 **Center for Strategic and International Studies CSIS (DC)** Policy Intern
  - Studied Internet ecosystems and AI regulation's impact on people's relation to information
  - Collaborate with lawyers, industry partners, and state officials to inform policymakers about GDPR
- Jun.-Aug.17 **Nokia Bell Labs (NJ)** Machine Learning Research Intern
  - Optimized slice allocation with forecasting methods and time series analysis to lower communication latency
  - Won intern R&D talk contest in department; and worked on a side project with CEO about news credibility

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## Research Experience

- Sep.17-Aug.23 **MIT - Institute for Data, Systems, and Society (MA)** PhD Researcher in Computational Social Science
  - Maths and Governance:** Authored mathematical theories on binary vote aggregation; studied the dynamics of networked delegations proving new results on the infinite Poly Urn processes; designed 10+ experimental designs and conducted experiments that statistically validated the theory; led subsequent programs on decentralized governance with companies and political actors to deploy research in the real world
  - Statistical Analysis of the Causality of Information Disorders:** Studied resonance of narratives with the citizenry and its interplay on social movements in France through natural language processing (NLP) of a corpus of 10k+ public opinion surveys and scraped media output; measured the impact of online marketing on journalism credibility since the 2016 US election; conducted NLP and Bayesian analyses of 1M headlines, and randomized experiments (n=10,000) testing ads' causal effects
  - Data Science Projects:** Leveraged 100k Reddit posts on tinnitus with NLP and networks dynamics to understand peer-support online; studied NBA players' key performance drivers through machine learning for dimension reduction of plays
- Aug.22-Aug.23 **Harvard Kennedy School** Doctoral Democracy Fellow  
*Research democratic innovation, AI governance, and AI alignment connecting maths and political philosophy*

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## Teaching & Advising

- Feb.21-Now **MIT - Institute for Data, Systems, and Society: Quant Review** Instructor for Masters Students
  - Created content for, and teach a 15h-seminar in Algebra, Probability and Statistics, Micro-Economy and Data science for 30+ Masters Students. See class material [here](#). (Feedback available upon request)
- Jul.-Aug.20-21 **MIT - Sloan School: Data, Model, and Decisions** Teaching Assistant for Executive MBAs
  - Taught 120 MBA Students in Probability, Statistics, and Optimization, created recitations, wrote and graded problem sets (Teaching Evaluation: 6.7/7, details available upon request)
- Sept.18-Aug.19 **MIT - Institute for Data, Systems, and Society** Undergraduate Research Advisor
  - Advised MIT UROP students Mariette Munier and Yi Wang

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## Service and Leadership (selection)

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- Jun.19-Now* **Reviewer for Academic Conferences** - Association for the Advancement of Artificial Intelligence (AAAI), Conference on Decision and Control (CDC) and American Control Conference (ACC), International Conference on Autonomous Agents and Multiagent Systems (AAMAS)
- Sep.21-Apr.22* **CYN.AI** - Advised R&D team in building AI to detect bias in readers' content and flag missing context.
- Apr-Jul.20* **MIT IDSS - Covid-19 COLLABORATION** - Co-designed opting-out and class schedules for MIT back-to-campus strategy following COVID-19 lockdown
- Aug.22-Now* **Mechanism Design for Social Good (MD4SG)** - Co-lead the civic participation research group ([link](#))
- Jan.22-Dec.22* **Workshop on Liquid Democracy** - Co-organized a 2-day conference to connect 50 scholars researching liquid democracy from various fields to spark inter-disciplinary discoveries
- Jan.-Jun.21* **International Conference of the Web and Social Media (ICWSM)** - Co-organized 1-day archival workshop *Alternative Realities in Troubled Democracies* ([link](#)). Created content, advertised event, reviewed papers.
- Sep.15-Jun.18* **BeeGames Association** - Launched a cross-functional collaboration between companies, universities, and basketball professionals. Lead of a 25-person team creating a network of investors and organizing networking events. Worked with the former head coach of the French national team and Olympics vice-champions.

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## Awards

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- 2022 **Harvard Kennedy School Democracy Fellowship** - Reward students leading democratic innovations
- 2021 **Best Research Talk** - Selected best pitch talk at the Virtual Conference on Computational Audiology
- 2019 **Hammer Fellowship** - Award that empowers first-year IDSS PhD students
- 2019 **Best Masters Thesis Nominee** - One of four finalists for the best thesis award in Technology & Policy
- 2017 **Centrale Talent** - Reward outstanding initiatives and achievements of a student at École Centrale Paris
- 2017 **Coordination Jeunes Promotions** - Best associative project for the BeeGames Association
- 2012 **Education Award** - Reward exceptional academics, leadership and civic life engagement in Ile-de-France

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## Skills and Interests

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**Languages:** Python (preferred), R, SQL, HTML (experienced), JAVA, Matlab, CSS (basic), French (native), English (fluent), Italian (proficient), Spanish (basic)

**Journalism:** Created a newspaper (The Fool on the Hill) and worked for two radios (Radio Parentheses and Soleil de Re), writing editorials and hosting live shows between 2010 and 2018. Conducted monthly interviews.

**Basketball:** Practice in competition, national level. Coach in summer camp (TBA) and of university men's B team

**Windsurfer, runner, books lover**

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## Publications (<sup>CS</sup>: theoretical computer science, <sup>E</sup>: quantitative empirical science, <sup>P</sup>: philosophy)

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**Peer-reviewed** ([Link](#) to Google Scholar Page)

- <sup>CS</sup> *In Defense of Liquid Democracy*, (alphabetical) Halpern, Halpern, Jadbabaie, Mossel, Procaccia, Revel, **Proceedings of Economics and Computation EC 23**, 2023
- <sup>P</sup> How to Open Democratic Representation? Revel, **European Journal of Risk Regulation, Cambridge University Press**, 2023
- <sup>CS</sup> How Many Representatives Do We Need? The Optimal Size of an Epistemic Congress, Revel\*, Lin\*, Haleprn\* - **Proceedings of 36th AAAI Conference on Artificial Intelligence**, 2022
- <sup>E</sup> *Liquid Democracy in Practice: An Empirical Analysis of its Performance*, Revel, Haleprn, Berinsky, Jadbabaie - **Equity and Access in Algorithms, Mechanisms, and Optimization**, 2022
- <sup>E</sup> *Varieties of Resonance: The Subjective Interpretations and Utilizations of Media Output in France*, Park, Abecassis, Revel - **Poetics**, 2021

### Working Papers

- <sup>CS</sup> *In Defense of Liquid Democracy* (under review, [link](#)) with Halpern, Halpern, Mossel, Procaccia, Jadbabaie
- <sup>CS</sup> *Selection Representative Bodies: An Axiomatic View* (under review), with Bohemer, Brill, Colley, Elkind, Faliszewski
- <sup>E</sup> *Native advertisement and the credibility of online publishers* (under review, [link](#)) with Tohidi, Eckles, Berinsky, Jadbabaie

### Media Articles

- *Foundry: Think global, act local.* ([link](#)) with Papaemmanuel - **Palantir Blog**, Dec.2022
- *Rules of Thumb: Adjusting Class Schedules in Fall Term '20* ([link](#)) with Haupt - **MIT ISOLAT**, Aug.2020
- *A privacy-preserving opt-out mechanism for returning to campus* ([link](#)) with Haupt - **MIT ISOLAT**, July.2020
- *Internet, you lie! (in French)* ([link](#)) — **L'Hémicycle**, Aug. 2019

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## Research Conferences (selection)

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- **Economics and Computation EC'23 (Kings College)** [Talk](#): In Defense of Liquid Democracy
- **AI for Institutions (Cooperative AI Foundation)** [Lightening Talk](#): AI Governance
- **Plurality Research Network Conference (UC Berkeley)** [Lightening Talk](#): Governance with Proxy Democracy ([link](#))
- **Long-term Risks and Future Generation Workshp (Maastricht University)** [Talk](#): *How to Open Democratic Representation?*
- **International Workshop on Reimagining Democracy 2022** [Talk](#): *How to Open Democratic Representation* ([link](#))
- **INFORMS 2022** [Talk](#): *Democracy Mechanisms for emerging forms of democratic participation*
- **EAAMO 2022** [Oral Presentation](#): *Liquid Democracy in Practice (Presented by D Halpern)*
- **SDSCon 2022 (MIT)** [Lightening Talk & Poster Session](#): *Collective Decision-Making in Representative Democracy*
- **WiDS 2022** [Lightening Talk](#): *Collective Decision-Making in Democracy*
- **AAAI Conference on Artificial Intelligence 2022** [Selected Oral Presentation & Poster](#): *Optimal Congress Size*
- **LIDS Student Conference 2022 (MIT)** [Talk & Poster](#): *Collective Decision-Making on Binary Issues in Representative Democracy*
- **VCCA21 2021** [Talk](#): *What can we learn about tinnitus from social media posts? (Best Pitch Award)*
- **IC2S2 2020** [Talk](#): *The effect of native advertising on the U.S. News Industry*
- **College of Computing Launch 2018 (MIT)** [Poster](#): *Online Ads: Failure of Quick-Fix Solution to Journalism Crisis*
- **TMP Consortium 2018 (Delft University)** [Talk](#): *The role of the CRNs in online misinformation*

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## Invited Speaker (selection)

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- **Spread of Misinformation and Collective Action (MIT)** [Talk](#): The Institutional Design Problem - Apr.23 ([link](#))
- **Harvard Department of Mathematics** *The Mathematics of Democracy* - Mar.23 ([link](#))
- **Entretiens de New York** Garry Kasparov and Hubert Vedrine interview - Mar.23 ([link](#))
- **Metagov Seminar** *Liquid Democracy in Practice* - Feb.23 ([link](#))
- **Computational Social Choice Seminar** *Democratic Innovations and Social Choice* - Nov.22 ([link](#))
- **GoogleX Alphabet Modeling Seminar** *Modeling Democratic Innovations* - Nov.22
- **University of Amsterdam** *Innovating with Democratic Representation* - Oct.22
- **Datascientest** *Data and Models to Study Alternative Voting Systems* - Sept.22 ([link](#))
- **HEC Paris** *Innovating with Democratic Representation* - Sept.22
- **bluenove & Hypermind** *Liquid Democracy and Collective Intelligence* - Apr.22
- **University of Groningen** *In Defense of Liquid Democracy* - Mar.22
- **Debating Europe Think Tank** *What should democracy look like in the 21st century?* - Feb.22 ([link](#))
- **MIT Sloan Fellows Speaker Series** *Collective Intelligence: Applications to Democracy* - Dec.21
- **WiDS 2020** *Data weaponized, data scrutinized: a war on information*, May20

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## News Coverage

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- **IDSS News**, *Aligning Decision-Making Processes with Democratic Values* ([link](#)) - Apr.23
- **CentraleSupélec Social Media**, *Maths rescuing democracy +100,000 views across social media* ([link](#)) - Feb.22
- **MIT News & LIDS/All**, *Understanding how people make sense of information in the information age* ([link](#) & [link](#)) - Nov.20
- **MIT News**, *Combining artificial intelligence with their passions* ([link](#)) - Aug.19
- **Alter Ago Le Mag** *Manon Revel: En deça et au-delà des algorithmes* (Under and beyond algorithms) ([link](#)) - Sept. 18