

Research maths models for decision-making. Passionate about empowering ethical engineering systems.

Education

- Sep.19-Aug.23 **Massachusetts Institute Technology (MIT)** PhD in Social and Engineering Systems and Statistics
Focus Area: Probability, Statistics, Mathematical Models for Social Sciences, Computational Social Choice Theory
- Sep.17-Jun.19 **Massachusetts Institute Technology (MIT)** MSc in Technology and Policy
Focus Area: Network Science, Causal Inference, Political Economy, Technology, Law and Public 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

Work Experience

- Sep.23-Now **Harvard Law School - Berkman Klein Center** Employee Fellow
• Research platforms' governance
- Sep.23-Now **Responsible AI Institute** Fellow
• Contribute to designing the institute's responsible AI assessment
- May.-Aug.22 **Palantir Technologies** Deployment Strategist Intern
• Partnered with clients to invent data analysis workflows in the Utility space and strengthened partnership
• Conceived and deployed analytical workflows to augment real-time data-driven decisions
- Jul.-Aug.19 **AerospaceLab** Strategic Engineer - Machine Learning Consultant
• Envisioned and coded modules to monitor information virality leveraging 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)** Policy Intern
• Studied Internet ecosystems and AI regulation's impact on people's relation to information and public policy
• Collaborate with lawyers, industry partners, and state officials to inform policymakers about GDPR
- Jun.-Aug.17 **Nokia Bell Labs** 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; worked on a side project with CEO about news credibility

Research Experience

- Sep.17-Aug.23 **MIT - Institute for Data, Systems, and Society** PhD Researcher in Computational Social Science
Maths Models for Participatory Democracy
• Pioneered interdisciplinary research program on networked delegative decision-making (liquid democracy)
• Federated team of mathematicians, computer and political scientists and philosophers at MIT and Harvard
• Authored mathematical theory on binary vote aggregation proving new results on infinite Poly Urn processes
• Designed and deployed 13 experiments that statistically validated the theory
Statistical Analysis of the Causality of Information Disorders
• Partnered with sociologists and politicians to assess resonance of political narratives on French through NLP on a corpus of 10k+ public opinion surveys and manually scraped media output
• Measured the causal impact of online ads on journalism credibility since the 2016 US election
• Conducted Bayesian analyses of 1M headlines and randomized experiments (n=10k) testing ads' causal effects
Data Science Project
• Inferred NBA players' type through dimension reduction of spatial and temporal data inputs (teams' plays)
- Aug.22-Jul.23 **Harvard Kennedy School - Ash Center** Doctoral Democracy Fellow
• Published political philosophy theory on reviving democratic principles through new model for representation

Teaching & Advising Experience

- 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)

<i>Jul.-Aug.20-21</i>	MIT - Sloan School: <i>Data, Model, and Decisions</i> <ul style="list-style-type: none"> • 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) 	Teaching Assistant for Executive MBAs
<i>Sept.18-Aug.19</i>	MIT - Institute for Data, Systems, and Society <ul style="list-style-type: none"> • Advised MIT UROP students Mariette Munier and Yi Wang 	Undergraduate Research Advisor

Service and Leadership Experience (selection)

<i>Always-Now</i>	Catalyzer of Ideas and Gatherings I love organizing events around a topic, bringing curious audiences to create new ideas! <ul style="list-style-type: none"> • Seminar on the History of Mathematics: Organize talks at MIT about maths concepts' history, since Oct.23 • Social Media Group Meeting: Created program for and lead a semester-long seminar at the Harvard Law School about foundational aspects of social media, since Oct. 23 • Mechanism Design for Social Good (MD4SG): Co-lead the civic participation research group (link), since Aug.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 at the University of Zurich on Dec.22 • International Conference of the Web and Social Media (ICWSM): Co-organized 1-day archival workshop on Alternative Realities in Troubled Democracies (link) in Jun.21
<i>Jun.19-Now</i>	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)
<i>Sep.15-Jun.18</i>	Founder of the BeeGames Association - Launched a collaboration between companies, universities, and basketball professionals; lead of a 25-person team creating a network of investors, fundraising, and organizing networking events; worked with the former head coach of French national team and Olympics vice-champions.

Awards

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

Skills and Interests

Computer Languages: Python (preferred), R, SQL, HTML (experienced), JAVA, Matlab, CSS (basic)
Human Languages: 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 and of university men's team
Windsurfer, runner, books lover

Publications (^{CS}: theoretical computer science, ^E: quantitative empirical science, ^P: philosophy)

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

- ^{CS} *In Defense of Liquid Democracy*, (alphabetical) Halpern, Halpern, Jadbabaie, Mossel, Procaccia, Revel, **Proceedings of Economics and Computation EC 23**, 2023
- ^P How to Open Democratic Representation? Revel, **European Journal of Risk Regulation, Cambridge University Press**, 2023
- ^{CS} 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**
- ^E *Liquid Democracy in Practice: An Empirical Analysis of its Performance*, Revel, Haleprn, Berinsky, Jadbabaie - **Equity and Access in Algorithms, Mechanisms, and Optimization**, 2022
- ^E *Varieties of Resonance: The Subjective Interpretations and Utilizations of Media Output in France*, Park, Abecassis, Revel - **Poetics**, 2021

Working Papers

- ^{CS} *In Defense of Liquid Democracy* (under review, [link](#)) with Halpern, Halpern, Mossel, Procaccia, Jadbabaie
- ^{CS} *Selection Representative Bodies: An Axiomatic View* (under review), with Bohemer, Brill, Colley, Elkind, Faliszewski
- ^E *Native advertisement and the credibility of online publishers* (under review, [link](#)) with Tohid, 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

Research Conferences (selection)

- **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 Workop (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

Invited Speaker (selection)

- **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

News Coverage

- **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/AIL**, *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 deçà et au-delà des algorithmes* (Under and beyond algorithms) ([link](#)) - Sept. 18