MANON REVEL

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🏠 Cambridge MA 02139

✉ mrevel@mit.edu

🌐 https://manrev.github.io/manon/

Research Decentralized Decision-Making and Information Disorders

Education

Aug.22-*Now*	**Harvard Kennedy School - Ash Center**	Doctoral Democracy Fellow

Research democratic innovation for decentralized governance at the intersection of mathematics and philosophy

Sep.*19-Now*	**MIT - Statistics and Data Science Center**	PhD in Social & Engineering Systems and Statistics (GPA: 5/5)

Relevant coursework: 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 - Institute for Data, Systems and Society**	MSc in Technology & Policy (GPA: 4.8/5)

Relevant coursework: 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 & MSc in Applied Mathematics

Relevant coursework: Probability, Statistics, Partial Differential Equations, Algebra and Cryptology, Algorithms & Programming, Machine Learning, Software Development, Quantum & Statistical Physics, Digital & Collaborative Engineering, Economy, Sociology, Epistemology

Work Experience

Sep.*17-Now*	**MIT - Institute for Data, Systems, and Society (MA)**	Research Assistant in Computational Social Science

Stochastic and networked behaviors for decentralized governance
- Designed research program on decentralized governance, combining insights from mathematics, computer science and political theory. Partnered with companies and DAOs to deploy research.
- Theorized and experimented the performance of a novel networked governance model: liquid democracy; studied theory of stochastic delegation dynamics and ran 10+ experiments that validated the theory
- Uncovered regimes that maximize accuracy of binary *expert classifiers* (first-order statistics of a sample)
- Studied NBA players' key performance drivers through dimension reduction of plays (terabyte-size dataset)

Causality of information disorders
- Studied resonance of narratives with the citizenry and its interplay on social movements in France through statistical analyses of a corpus of 10k+ public opinion surveys and scraped media output
- Leveraged 100k Reddit posts on tinnitus with NLP and network's dynamics to understand peer-support online
- Measured the impact of online marketing on journalism credibility since the 2016 US election. Conducted NLP and Baysian analyses of 1M headlines, and randomized experiments (n=10,000) testing ads' causal effects

May.-Aug.22	**Palantir Technologies (NY)**	Deployment Strategist Intern

- Conceived and developed central analytical workflows to augment data-driven decisions in the Utility space
- Supported deployment of software features through high-level vision and hands-on coding

Jul.-*Aug.19*	**Aerospacelab (Belgium)**	Strategic Engineer - Machine Learning (ML) Consultant

- Coded modules to monitor information virality on social media implementing natural language models, network dynamics analyses and time series analyses
- Wrote scripts to automatize data collection and scraping on Twitter, YouTube and Reddit

May.-Aug.18	**Center for Strategic and International Studies (DC)**	Research Intern in Technology and Policy

- Studied the impact of the Internet ecosystem and regulation on people's relation to information
- Collaborate with lawyers, industry partners and state officials to inform policy makers about GDPR

Jun.-Aug.17	**Nokia Bell Labs - Network, Algorithms, Analytics, Control and System Lab (NJ)**	Research Intern in ML

- Optimized slice allocation with forecasting methods and time series analysis to lower communication latency
- Won intern R&D talk contest; and worked on side project with CEO, Marcus Weldon about news credibility

Skills

Python, R, SQL, HTML (JAVA, Matlab, CSS)   French, English, Italian (Spanish)

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

Teaching

Feb.21-Now	**MIT - Institute for Data, Systems and Society Masters:** *Quant Review*	Instructor for Masters Students

- Created content for, and teach a 15h-seminar in Algebra, Probability and Statistics, Micro-Economy, Game Theory 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)

Service & Leadership

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-organize a 2-day conference to connect 50 scholars researching liquid democracy from various fields to spark inter-disciplinary discoveries

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)

Dec.21-Jun.22 **New England Graduate Women in Science and Engineering** - Coordinator for the MIT council

Sep.21-Apr.22 **CYN.AI** - Advised R&D team in building an algorithm to detect bias in readers' content, and flag missing context.

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.-Dec.21 **LIDS Student Conference** - Co-organized a 1-day online conference (*link*) featuring the work of 28 MIT students. Lead the machine learning and statistics session.

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

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 organising networking events. Worked with basketball professional athletes and federations (Official sponsor was Boris Diaw)

Awards

2022 **Harvard Kennedy School Democracy Fellowship** - Reward students leading democratic innovations

2021 **Best Research Pitch** - Selected best video 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

Publications

Peer-reviewed

- *Liquid Democracy in Practice: An Empirical Analysis of its Performance,* M Revel, D Haleprn, A Berinsky, A Jadbabaie - **Equity and Access in Algorithms, Mechanisms, and Optimization,** 2022 (non-arkival)
- *Online discussions about tinnitus: What can we learn from natural language processing of Reddit posts,* V Manchaiah, A Londero, D Deshpande, M Revel, G Palacios, L Boyd, & S Ratinaud - **American Journal of Audiology**, 2022
- *How Many Representatives Do We Need? The Optimal Size of an Epistemic Congress,* M Revel, T Lin, D Haleprn - Proceedings of 36th **AAAI Conference on Artificial Intelligence**, 2022
- *Varieties of Resonance: The Subjective Interpretations and Utilizations of Media Output in France,* BY Park, A Abecassis, M Revel - **Poetics**, 2021

Working Papers

- *In Defense of Liquid Democracy* (under review, *link*) with D Halpern, J Halpern, E Mossel, A Procaccia, A Jadbabaie
- How to Open Democratic Representation? (under review, political theory)
- Selection Representative Bodies: An Axiomatic View (under review), with N Bohemer, M Brill, R Colley, E Elkind, P Faliszewski
- Liquid Democracy in Practice: A Better Empirical Analysis of its Performance, M Revel, D Haleprn, A Berinsky, A Jadbabaie

- *Native advertisement and the credibility of online publishers* (under review, *link*) with A Tohidi, D Eckles, A Berinsky, A Jadbabaie
- *What can we learn about tinnitus from social media posts? with V Manchaia, A Londero*

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

Research Conferences (selection)

- **Plurality Research Network Conference (University of California Berkeley)** <u>Lightening Talk</u>: Governance with proxy democracy
- **Long-term Risks and Future Generation Worksop (Maastricht University)** <u>Talk</u>: *How to Open Democratic Representation?*
- **Liquid Democracy Workshop (University of Zurich)** <u>Talk</u>: *Innovating with Liquid Democracy*
- **INFORMS 2022** <u>Talk</u>: *Democracy Mechanisms for emerging forms of democratic participation*
- **Algorithmic Technology for Democracy Workshop 2022 (Leiden University)** <u>Workshop Participant</u>: Representative Democracy
- **EAAMO 2022** <u>Oral Presentation</u>: *Liquid Democracy in Practice (Presented by D Halpern)*
- **SDSCon 2022 (MIT)** <u>Lightening Talk & Poster Session</u>: *Collective Decision-Making in Representative Democracy*
- **WiDS 2022** <u>Lightening Talk</u>: *Collective Decision-Making in Democracy*
- **AAAI Conference on Artificial Intelligence 2022** <u>Selected Oral Presentation & Poster</u>: *Optimal Congress Size*
- **LIDS Student Conference 2022 (MIT)** <u>Talk</u>: *Collective Decision-Making on Binary Issues*
- **IDSS Visiting Committee 2022 (MIT)** <u>Poster</u>: *Collective Decision-Making in Representative Democracy*
- **LIDS Tea Talk 2021 (MIT)** <u>Talk</u>: *In defense of fluid democracy*
- **VCCA21 2021** <u>Talk</u>: *What can we learn about tinnitus from social media posts?*
- **IC2S2 2020** <u>Talk</u>: *The effect of native advertising on the U.S. News Industry*
- **College of Computing Launch 2018 (MIT)** <u>Poster</u>: *Online Ads: Failure of Quick-Fix Solution to Journalism Crisis*
- **IDSS Advisory Board 2018 (MIT)** <u>Poster</u>: *Online Ads: Failure of Quick-Fix Solution to Journalism Crisis*
- **TMP Consortium 2018 (Delft University)** <u>Talk</u>: *The role of the CRNs in online misinformation*

Invited Speaker (selection)

- **International Workshop on Reimagining Democracy 2022 (Harvard)** *How to Open Democratic Representation - Dec.22* (*link*)
- **Computational Social Choice Seminar** *Democratic Innovations and Social Choice - Nov.22* (*link*)
- **Google 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*
- **Innovating Democracy Organization (Harvard)** *Liquid Democracy as a Democratic Innovation - Apr.22*
- **Brain & Cognitive Science Speaker Series (MIT)** *Liquid Democracy - Apr.22*
- **bluenove** *Démocratie Liquide et Intelligence Collective- Apr.22*
- **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
- **French ENT annual congress** *Will expert systems displace clinical intuition? - May.17* (*link*)

News Coverage

- **CentraleSupelec Social Media**, *Les maths à la rescousse de la démocratie (Maths rescuing democracy) +90,000 views on LinkedIn and +2,000 on YouTube* (*link*) - Feb.22
- **MIT News**, *Understanding how people make sense of information in the information age* (*link*) - Nov.20
- **LIDS/All**, *Understanding how people make sense of information in the information age* (*link*) - Oct.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