JACQUELINE R. M. A. MAASCH

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Education

05.2026 **Cornell Tech | New York, NY**
Doctor of Philosophy in Computer Science (anticipated)

05.2024 MS in Computer Science, conferred on PhD candidacy | GPA 4.0
Areas: AI / ML, Scientific Computing, Applied Probability & Statistics
NSF Graduate Research Fellow | *Presidential Life Science Fellow*

05.2021 **University of Pennsylvania | Philadelphia, PA**
Master of Computer & Information Technology | GPA 3.97
Interdisciplinary Innovation Fellow | *Reproducible Research Fellow*

05.2016 **Smith College | Northampton, MA**
BA Anthropology (Biological, Medical), Environmental Science | GPA 3.97
Summa Cum Laude | *Phi Beta Kappa* | *Sigma Xi*

Experience

05.2024 – 08.2024 **Research Intern**
Microsoft Research (MSR) Machine Intelligence Core | *Cambridge, UK*
PI: Dr. Aditya Nori, Dr. Javier González. Novel methods in AI reasoning.

05.2022 – 08.2022 **Clinical Data Science Intern**
Boehringer Ingelheim Global Biostatistics & Data Sciences | *Ridgefield, CT*
PI: Dr. Yi Liu. Multimodal deep learning methods for survival analysis in pharmaceutical development.

08.2021 – Present **PhD Student Researcher**
Weill Cornell Medicine Institute of AI for Digital Health | *New York, NY*
PI: Dr. Fei Wang. AI for clinical risk modeling, causal inference, target trial emulation, and computational biomedicine.

Cornell Tech Operations Research | *New York, NY*
PI: Dr. Kyra Gan. Robust and efficient statistical inference, scalable causal discovery, and causal fairness in healthcare.

Cornell Tech Computer Science | *New York, NY*
PI: Dr. Volodymyr Kuleshov. Core problems in generative and probabilistic modeling with applications to genomics and biomedicine.

05.2020 – 07.2021 **Master's Student Researcher**
University of Pennsylvania Bioengineering | *Philadelphia, PA*
PI: Dr. César de la Fuente. DOD-funded research on discriminative and generative ML for antibiotic discovery.

Interests Probabilistic graphical models; reasoning in generative models; causal discovery / graph structure learning; causal inference; graph theory; applied probability.

Languages *Proficient*: Python; R; LaTeX.
Prior experience: Java; C; JavaScript; MATLAB.

Tools *Frequently using:* sklearn; numpy; tidyverse; git; high-performance computing.
Prior experience: PyTorch; TensorFlow; Stan.

Select Fellowships & Awards

2023 Cornell Tech Outstanding Service and Community Award
2021 NSF Graduate Research Fellowship
2021 Presidential Life Science Fellowship | Cornell
2021 Reproducible Research Fellowship | OKFN, Alfred P. Sloan Foundation
2020 Grace Hopper Celebration Scholarship | UPenn

Invited Talks

10.24 INFORMS Annual Meeting | Seattle, WA (forthcoming)
Local Causal Discovery for Structural Evidence of Direct Discrimination
07.24 Microsoft Research Machine Intelligence Core | Cambridge, UK
06.24 University of Cambridge Statistical Laboratory | Cambridge, UK
Local causal discovery for effect estimation
04.24 34th Annual POMS Conference | Minneapolis, MN
Local Discovery by Partitioning

In Preparation & Under Review

2024 Kuleshov, V; **Maasch, J**; Ermon, S. *Probabilistic Graphical Models: A Concise Tutorial*. In preparation for *Foundations & Trends in Machine Learning*.
2024 **Maasch, J**; et al. *Local Causal Discovery for Structural Evidence of Direct Discrimination*. Under review. [arXiv]

Select Peer-Reviewed Publications (Google Scholar)

2024 Hiremath, S; **Maasch, J**; et al. *Hybrid Global Causal Discovery with Local Search*. Proceedings of the Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS 2024). [arXiv]
2024 **Maasch, J**; et al. *Local Discovery by Partitioning: Polynomial-Time Causal Discovery Around Exposure-Outcome Pairs*. Proceedings of the 40th Conference on Uncertainty in Artificial Intelligence. [arXiv] [Slides] [Poster]
2024 Pan, W; Su, C; **Maasch, J**; et al. *Learning Phenotypic Associations for Parkinson's Disease with Longitudinal Clinical Records*. AMIA Summits on Translational Science Proc. American Medical Informatics Assoc. [NCBI]
2023 **Maasch, J***; Torres, M*; et al. *Molecular de-extinction of ancient antimicrobial peptides enabled by machine learning*. Cell Host & Microbe. 31. 8. 1260-1274. e6. 2023. **Equal contribution*. [Cell]
2022 Melo, M*; **Maasch, J***; et al. *Machine Learning for Drug Discovery*. 2022. American Chemical Society. **Equal contribution*. [Google Books]

Workshop Presentations

2023 **Maasch, J**; et al. Local Discovery by Partitioning: Polynomial-Time Causal Discovery Around Exposure-Outcome Pairs. *NeurIPS Causal Representation Learning Workshop*. [arXiv]
2023 **Maasch, J**; et al. Regularized Data Programming with Automated Bayesian Prior Selection. *ICML Workshop on Structured Probabilistic Inference & Generative Modeling*. [arXiv]

Professional Activities

2024 Co-organizer, NYC Learning on Graphs Conference
2024 Student leader, Cornell CS PhD Visit Days; Reviewer, PhD Admissions
2023 Co-developer, Cornell CS 6006: Succeeding in the Graduate Environment
2023 Founder / organizer, Cornell Causal Reading Group

Patents

2022 Co-Inventors: de la Fuente-Nunez C, Torres M, Melo M, **Maasch J**. Title: *Identification of antimicrobial peptides*. Docket no: 104377.000299 / 23-10289. Application no: 63/383,761. *Pending*.

Peer Review

AI AISTATS; ACL Rolling Review; ICML SPIGM; NeurIPS WiML.
Bio Communications Biology (Nature Portfolio); Journal of Biomedical Informatics (Elsevier); Bioinformatics (Oxford Academic); ACS Infectious Diseases.