JACQUELINE MAASCH   ✉ MAASCH@CS.CORNELL.EDU | in LINKEDIN | ⚙ JMAASCH.GITHUB.IO

RESEARCH FOCUS	*Machine intelligence for reasoning and decision-making under uncertainty.*

EDUCATION

2026   **Cornell Tech | New York, NY**
Doctor of Philosophy in Computer Science (anticipated)
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

2021   **University of Pennsylvania | Philadelphia, PA**
Master of Computer & Information Technology | GPA 3.97
Interdisciplinary Innovation Fellow | Reproducible Research Fellow

2016   **Smith College | Northampton, MA**
BA Anthropology (Biological, Medical), Environmental Science | GPA 3.97
Summa Cum Laude – Top 1% of class | Phi Beta Kappa | Sigma Xi

EXPERIENCE

05.2025 –
08.2025   **Research Intern**
YRIKKA | New York, NY
PI: Dr. Kia Khezeli. Test-time adaptation and world modeling for abstract, causal, and logical reasoning in large language models.
Outcomes: NeurIPS LAW 2025 (spotlight), Amazon Trusted AI (poster).

05.2024 –
08.2024   **Research Intern**
Microsoft Research (MSR), Machine Intelligence Core | Cambridge, UK
PI: Dr. Aditya Nori, Dr. Javier González. Methods for the evaluation and elicitation of causal and compositional reasoning in language models.
Outcomes: ICML 2025, ICLR 2025, pending patent, 2.3k+ HF downloads.

05.2022 –
08.2022   **Clinical Data Science Intern**
Boehringer Ingelheim, Biostatistics & Data Sciences | Ridgefield, CT
PI: Dr. Yi Liu. Internal research on multimodal deep learning 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. Causal machine learning for computational biomedicine.

Cornell Tech Computer Science | New York, NY
PI: Dr. Volodymyr Kuleshov. Deep generative and probabilistic modeling.

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

05.2020 –
07.2021   **Master's Student Researcher**
University of Pennsylvania Bioengineering | Philadelphia, PA
PI: Dr. César de la Fuente. New paradigms for ML-based drug discovery.
Outcomes: Thesis coined the new field of *molecular de-extinction*, published in Cell Host & Microbe and covered by NPR, Nature News, CNN, and more.

LANGUAGES	*Proficient*: Python; R; LaTeX; shell. *Prior experience:* Stan; Java; C; MATLAB.
FRAMEWORKS	PyTorch; NumPy; sklearn; tidyverse; Git; AWS; Slurm-based HPC; ARC-AGI.

SKILLS & INTERESTS		*2019 – Present*: Probabilistic graphical models; generative models; AI reasoning; world models; neuro-symbolic AI; AI evaluation; causal inference; causal discovery; causal fairness; reinforcement learning; graph theory; applied probability; statistics; logic; computational biomedicine; drug discovery. *Pre-2019*: Molecular genetics, molecular diagnostics, epidemiology.

SELECT FELLOWSHIPS & AWARDS

Year	Award
2025	Doctoral Fellowship | Cornell Tech Digital Life Initiative
2023	Outstanding Service and Community Award | Cornell Tech
2021	NSF Graduate Research Fellowship | US National Science Foundation
2021	Presidential Life Science Fellowship | Cornell University
2021	Reproducible Research Fellowship | OKFN, Alfred P. Sloan Foundation
2020	Interdisciplinary Innovation Fellowship | University of Pennsylvania
2020	Grace Hopper Celebration Scholarship | University of Pennsylvania

SELECT PEER-REVIEWED PUBLICATIONS (GOOGLE SCHOLAR)

2025 [ICML] **Maasch, J**; Hüyük, A; Xu, X; Nori A; González J. *Compositional Causal Reasoning Evaluation in Language Models.* 42nd International Conference on Machine Learning. [ARXIV] [SLIDES] [WEBSITE] [POSTER]

2025 [ICLR - ORAL - TOP 1.8%] Hüyük, A; Xu, X; **Maasch, J**; et al. *Reasoning Elicitation in Language Models via Counterfactual Feedback.* 13th International Conference on Learning Representations. [ARXIV]

2025 [AAAI] **Maasch, J**; et al. *Local Causal Discovery for Structural Evidence of Direct Discrimination.* 39th Annual AAAI Conference on Artificial Intelligence. [ARXIV] [SLIDES] [POSTER]

2024 [NEURIPS] Hiremath, S; **Maasch, J**; et al. *Hybrid Top-Down Global Causal Discovery with Local Search for Linear and Nonlinear Additive Noise Models.* 38th Annual Conference on Neural Information Processing Systems. [ARXIV]

2024 [UAI] **Maasch, J**; et al. *Local Discovery by Partitioning: Polynomial-Time Causal Discovery Around Exposure-Outcome Pairs.* 40th Conference on Uncertainty in Artificial Intelligence. [ARXIV] [SLIDES] [POSTER]

2023 [CELL HOST & MICROBE] **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]

PEER-REVIEWED WORKSHOP PRESENTATIONS

2025 [NEURIPS - SPOTLIGHT] **Maasch, J**; Kalantari, J; Khezeli, K. *CausalARC: Abstract Reasoning with Causal World Models.* NeurIPS LAW: Bridging Language, Agent, and World Models. [WORKSHOP] [ARXIV] [WEBSITE]

2023 [NEURIPS] **Maasch, J**; et al. *Local Discovery by Partitioning: Polynomial-Time Causal Discovery Around Exposure-Outcome Pairs.* NeurIPS Causal Representation Learning Workshop. [WORKSHOP] [ARXIV]

2023 [ICML] **Maasch, J**; et al. *Regularized Data Programming with Automated Bayesian Prior Selection.* ICML Workshop on Structured Probabilistic Inference & Generative Modeling. [WORKSHOP] [ARXIV]

UNDER REVIEW & IN PREPERATION

2026 Lawrence, R*; **Maasch, J***. *Position: Trustworthy AI Reasoning Requires Process Validity.* In preparation. **Equal contribution.*

2025 **Maasch, J**; Neiswanger, W; Kuleshov, V; Ermon, S. *Probabilistic Graphical Models: A Concise Tutorial.* Invited, under review. [ARXIV] [WEBSITE]

PENDING PATENTS

2024 Hüyük, A; Xu, X; **Maasch, J**; Nori A; González J. *Fine-Tuning Language Models for Reasoning with Counterfactual Feedback.* App no: 63/699,777.

INVITED POSTERS

01.26 Amazon AGI Trusted AI Symposium \| New York, NY [WEBSITE]

INVITED TALKS		
	07.25	Microsoft Expo Booth, ICML | Vancouver, BC
	04.25	Flatiron Institute, Simons Foundation | New York, NY [SLIDES]
	03.25	Cornell INFO5375: Machine Learning for Health | New York, NY [SLIDES]
	10.24	INFORMS Annual Meeting | Seattle, WA [SLIDES]
	07.24	Microsoft Research Machine Intelligence Core | Cambridge, UK
	06.24	University of Cambridge Statistical Laboratory | Cambridge, UK
	04.24	34th Annual POMS Conference | Minneapolis, MN [SLIDES]

PROFESSIONAL ACTIVITIES		
	24-25	Co-organizer, NYC Learning on Graphs Workshop
	24-25	PhD Application Reviewer, Cornell Computer Science Graduate Admissions
	23-25	Student leader, Cornell CS PhD Visit Days
	2023	Co-developer, Cornell CS 6006: Succeeding in the Graduate Environment
	2023	Founder / organizer, Cornell Causal Reading Group

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