JACQUELINE R. M. A. MAASCH

✉ maasch@cs.cornell.edu | 𝄞 Google Scholar | R⁶ ResearchGate | ⓘ ORCID | in LinkedIn | ⓞ GitHub

EDUCATION

2021 – Present	**Cornell Tech**, NY, USA | Doctor of Philosophy in Computer Science Department of Computer Science | Areas: Artificial Intelligence and Scientific Computing GPA 4.0/4.0 — **NSF Graduate Research Fellow** — **Presidential Life Science Fellow**
2021	**University of Pennsylvania**, PA, USA | Master of Computer & Information Technology Department of Computer & Information Science | School of Engineering & Applied Science GPA 3.97/4.0 — **Interdisciplinary Innovation Fellow** — **Reproducible Research Fellow**
2016	**Smith College**, MA, USA | Bachelor of Arts Major: Anthropology (Focus: Biological, Medical Anthropology) | Minor: Environmental Science GPA 3.97/4.0 — **Summa Cum Laude** — **Phi Beta Kappa** — **Sigma Xi**

PROFICIENCIES

Interests	Machine learning, causal inference, computational biomedicine, drug development.
Languages	Python; R; LaTeX *(Proficient)* Java; C; JavaScript; MATLAB *(Prior experience)*
Tools	`PyTorch`; `TensorFlow`; `sklearn`; `tidyverse`; `Stan`; `git`; high-performance computing.
Courses	Generative & Probabilistic Models; Causal ML; Bayesian Analysis; Algorithmic Theory; NLP; Computer Vision; Linear Algebra; Discrete Math; Systems Programming.

GRADUATE RESEARCH EXPERIENCE

08.2021 – Present	**PhD Student Researcher, Wang Lab** *Cornell University Dept. of Computer Science, Weill Cornell Medicine*, New York, NY, USA *PI: Dr. Fei Wang.* Health informatics lab investigating machine learning methods for clinical risk modeling, computational drug discovery, and causal inference for biomedicine.
08.2021 – Present	**PhD Student Researcher, Kuleshov Group** *Cornell University Dept. of Computer Science, Cornell Tech*, New York, NY, USA *PI: Dr. Volodymyr Kuleshov.* Machine learning research group investigating core problems in generative and probabilistic modeling with applications to genomics and biomedicine.
05.2022 – 08.2022	**Clinical Data Science PhD Research Intern** *Boehringer Ingelheim, Global Biostatistics and Data Sciences*, Ridgefield, CT, USA *PI: Dr. Yi Liu.* Pharmaceutical industry research investigating deep learning methods for survival analysis that combine imaging, clinical, and radiomics data modalities.
05.2020 – 07.2021	**Master's Student Researcher, Machine Biology Group** *University of Pennsylvania Dept. of Bioengineering*, Philadelphia, PA, USA *PI: Dr. César de la Fuente.* DOD-funded laboratory integrating synthetic biology, machine learning, and molecular dynamics to engineer novel antimicrobials. Engineered ML systems to predict peptide functions and inform deep learning-based *de novo* peptide design.

FELLOWSHIPS, GRANTS & AWARDS

2023 Cornell Tech Service and Community Award
2021 National Science Foundation Graduate Research Fellowship
2021 Presidential Life Science Fellowship, Cornell University
2020 Grace Hopper Celebration Scholarship, University of Pennsylvania Computer & Information Science
2020 PyData Global Diversity Scholarship, PyData Global Data Science Conference
2020 Reproducible Research Fellowship, Open Knowledge Foundation, Alfred P. Sloan Foundation
2016 Summa Cum Laude (highest honors – 1% of graduating class), Smith College Class of 2016
2015 Phi Beta Kappa, Junior Inductee (3% of graduating class), Zeta of Massachusetts Chapter

PRE-PRINTS & WORKSHOP PAPERS

2023 **Maasch J**, et al. Regularized Data Programming with Automated Bayesian Prior Selection. Accepted: ICML Workshop on Structured Probabilistic Inference & Generative Modeling.
2022 Su C, Hou Y, Xu J, Xu J, Brendel M, **Maasch J**, et al. Integrative analyses of multimodal clinical, neuroimaging, genetic, and transcriptomic data identify subtypes and potential treatments for heterogeneous Parkinson's disease progression. *medRxiv*: 2021.07.18.21260731.

PEER-REVIEWED PUBLICATIONS

2023 **Maasch J***, Torres M*, et al. Molecular de-extinction of ancient antimicrobial peptides enabled by machine learning. *Cell Host & Microbe 31*. (*Equal contribution.)
2023 Su C, Hou Y, Rajendran S, **Maasch J**, et al. Biomedical discovery through the integrative biomedical knowledge hub (iBKH). *iScience 26* (4).
2022 Melo M*, **Maasch J***, de la Fuente-Nunez C. *ACS In Focus: Machine Learning for Drug Discovery.* American Chemical Society. eISBN: 9780841299238. (*Equal contribution.)
2021 Melo M*, **Maasch J***, de la Fuente-Nunez C. Accelerating antibiotic discovery through artificial intelligence. *Communications Biology 4* (1). (*Equal contribution.)
2021 Palmer N, **Maasch J**, et al. Molecular dynamics for antimicrobial peptide discovery. *Infection and Immunity 89* (4).
2020 **Maasch J**, et al. Rectal swabs as an alternative sample collection method to bulk stool for the real-time PCR detection of *Giardia duodenalis. Am J of Tropical Medicine and Hygiene 103* (3).
2020 Benjamin-Chung J, Pilotte N, Ercumen A, Grant JR, **Maasch J**, et al. Comparison of multi-parallel qPCR and double-slide Kato-Katz for detection of soil-transmitted helminth infection among children in rural Bangladesh. *PLOS Neglected Tropical Diseases 14* (14): e0008087.
2020 Hasegawa M, Pilotte N, Kikuchi M, Means AR, Papaiakovou M, Gonzalez AM, **Maasch J**, et al. What does soil-transmitted helminth elimination look like? Results from a targeted molecular detection survey in Japan. *Parasites and Vectors 13* (6).
2019 Pilotte N, **Maasch J**, et al. Targeting a highly repeated embryonic DNA sequence for improved real-time PCR-based detection of *Ascaris* infection in human stool. *PLOS Neglected Tropical Diseases 13* (7): e0007593.

PATENTS

2022 *Pending.* 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.

PROFESSIONAL ACTIVITIES

Referee Association for Computational Linguistics (ACL); ICML Workshop on Structured Probabilistic Inference & Generative Modeling (SPIGM); *Communications Biology* (Nature Portfolio); *Bioinformatics* (Oxford Academic); *ACS Infectious Diseases* (American Chemical Society).