

Gianluca Bencomo

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EDUCATION

- 2023 - present** Ph.D. (Computer Science) at **Princeton University**, *Advisor*: Thomas L. Griffiths
2021 - 2023 M.S.E. (Computer Science) at **Princeton University**, *Advisor*: Thomas L. Griffiths,
Thesis: Bayesian Filtering for Neural Networks
2017 - 2021 B.A. (Biochemistry) at **Whittier College**, *Minors*: Computer Science, Mathematics,
Thesis: Drug-Drug Interaction Prediction with Gaussian Processes

AWARDS & HONORS

- 2023** Princeton First Year Fellowship
2021 Pi Mu Epsilon Math Honor Society Inductee
2021 Nu Mu Rho Chemistry Honor Society Inductee
2021 W. Roy Newsome Award in Chemistry
2019 Harvard-Amgen Scholars Fellowship Recipient
2018 Keck Undergraduate Research Fellowship Recipient

PUBLICATIONS

- 2023** Bencomo, G., Snell, J., & Griffiths, T. (2023). Implicit Maximum a Posteriori Filtering via Adaptive Optimization. *Under Review at International Conference of Learning Representations*.
2023 Pasarkar, A., Bencomo, G., Olsson, S., & Dieng, A. B. (2023). Vendi Sampling For Molecular Simulations: Diversity As A Force For Faster Convergence And Better Exploration. *Accepted at Journal of Chemical Physics*.
2021 Born, R. & Bencomo, G. (2021). Illusions, delusions, and your backwards bayesian brain: a biased visual perspective. *Brain Behavior and Evolution*, 95(5), 272-285.
2018 Bencomo, G. & Jones, S. (2018). Electrochemical Production of Oxygen and Methane on Mars by In-Situ Resource Utilization. *NASA Technical Reports Server: NTRS*. [Washington, D.C.]
2016 Gunasekara, O., Jia, Z., Twagirayezu, F., Bencomo, G., Garcia, A., Nikaido, B., Garcia, J., & Melton, J. (2016). small Unmanned Aerial Vehicles Modeling and Testing. *NASA Technical Reports Server: NTRS*. [Washington, D.C.]

EMPLOYMENT

Princeton University, Department of Computer Science September 2021 - present
Fulfilled duties as an assistant instructor (Fall 2021 - Spring 2023) while concurrently pursuing a research program in Bayesian filtering and meta-learning. At present, I am pursuing research full-time. *Supervisor*: Dr. Thomas L. Griffiths.

Harvard Medical School, Department of Neurobiology June 2019 - August 2021
Conducted a time-varying behavioral analysis of primate visual decision-making data using dynamic logistic regression and other Bayesian methods. Studied topics including V2/V3 cortical feedback, multi-task learning, illusions, dopamine, and Schizophrenia. *Supervisor*: Dr. Richard T. Born.

NASA Jet Propulsion Laboratory, Electrochemical Technologies June 2018 - August 2018
Assisted in the successful design and construction of an electrochemical cell for the conversion of CO₂ to O₂ using a novel synthetic route. Research was in the interest of in-situ resource utilization requirements for life support on Mars. *Supervisor*: Dr. Simon C. Jones.

Explored and analyzed induced changes in anatomy, physiology, and the gene expression profile in PC-12 cells exposed to concentrations of commonly used agricultural pesticides. *Supervisor*: Dr. Erica Fradinger.

ACTIVITIES & COMMUNITY SERVICE

2017 - 2020 Whittier College Swimming & Diving Team Member (NCAA)

2017 - 2020 Whittier College Chemistry Tutor

- Inorganic Chemistry, Organic Chemistry, Quantitative Analysis Theory

2017 - 2020 LAC+USC Hospital, Department of Emergency Medicine Volunteer (300+ hours)

TEACHING

Fall 2021 Assistant Instructor, Princeton University, Introduction to Computer Science

Spring 2022 Assistant Instructor, Princeton University, Introduction to Computer Science

Fall 2022 Assistant Instructor, Princeton University, Introduction to Computer Science

Spring 2023 Assistant Instructor, Princeton University, Foundations of Probabilistic Modeling