

Polyphony J. Bruna

Website: pjbruna.github.io | Email: pbruna@ucmerced.edu

EDUCATION

University of California, Merced, CA

Expected 2027

Doctor of Philosophy, Cognitive and Information Sciences

Vassar College, Poughkeepsie, NY

2022

Bachelor of Arts, Cognitive Science and Philosophy

Minor, Japanese

- Overall GPA: 3.99/4.00
- Honors: *Phi Beta Kappa, Sigma Xi, Psi Chi, cum laude generali et cum laude in materia subiecta*

RESEARCH INTERESTS

Computational models of cognition; AI; Alignment; Representation

PUBLICATIONS

Bruna, P. J. & Kello, C. (2024). *Alignment through Efficiency: A path towards conceptual alignment through least effort*. [Manuscript in preparation].

Kello, C., & **Bruna, P. J.** (2024). *Emergent Mental Lexicon Functions in ChatGPT* [Preprint].

<https://doi.org/10.31234/osf.io/gka2j>

Rane, S.[†], **Bruna, P. J.**[†], Sucholutsky, I., Kello, C., & Griffiths, T. (2023). *Concept alignment*. 1st NeurIPS Workshop on AI meets Moral Philosophy and Moral Psychology (MP2). <https://arxiv.org/abs/2401.08672>

de Leeuw, J. R., Andrews, J., Barney, L., Bigler, M., **Bruna, P. J.**, Chen, Y., Cherry, R., Dowie, D. R., Forbes, E., Haffey, B., Hu, X., Jaklitsch, M., Leopold, N., Lewis, C., MacDonald, D., McShaffrey, C., Nakayama, K., Olstad, W., Peng, R., ... Zhang, L. (2021). Words May Jump-Start Meaning More Than Vision: A Non-Replication of Early ERP Effects in Boutonnet and Lupyan (2015). *Collabra: Psychology*, 7(1). <https://doi.org/10.1525/collabra.29763>

Bruna, P. J. (2019). A Review of Bryan W. Van Norden, Taking Back Philosophy. *Vassar College Journal of Philosophy*, 6, 73–75.

<https://www.vassar.edu/sites/default/files/2021-08/philosophy-journal-spring-2019.pdf>

TALKS AND POSTER PRESENTATIONS

Rane, S. & **Bruna, P. J.** (2024, TBD). *Concept alignment* [Invited Talk]. Institute of Philosophy, University of London, England. (Forthcoming)

Rane, S. & **Bruna, P. J.** (2023, Dec 15). *Concept alignment* [Poster Presentation]. 1st NeurIPS Workshop on AI meets Moral Philosophy and Moral Psychology (MP2), New Orleans, LA, United States.

Bruna, P. J. (2023, July 19). *Semantics and Syntax Co-emerge in Adaptive Reservoir Network Dynamics* [Talk]. Diverse Intelligences Summit, University of St. Andrews, Scotland.

[†] Authors contributed equally to this work

Bigler, M. & **Bruna, P. J.** (2020, Sep 30). *Probing the Methodology and Interpretation of Learned Categorical Perception Research* [Poster presentation]. 35th Annual URSI Symposium, Vassar College, Poughkeepsie, NY, United States.

https://www.vassar.edu/sites/default/files/2021-06/URSI_11_andrewsj_mbigler_pbruna.pdf

Bruna, P. J. (2020, Mar 27). *Hearing That It Is Silent: How to Hallucinate a Non-Perception* [Paper talk]. 10th Annual Mid-Hudson Valley Undergraduate Philosophy Conference, Marist College, Poughkeepsie, NY, United States. (Canceled due to COVID-19)

Bruna, P. J. & Marks, P. (2019, Sep 25). *Psychophysical Adaptive Procedure: Developing a New, Generalizable Method* [Poster presentation]. 34th Annual URSI Symposium, Vassar College, Poughkeepsie, NY, United States. https://osf.io/4ahd9/?view_only=0b55b01f9eea4ed1a0402589087a0a71

PROFESSIONAL MEMBERSHIPS

<i>Phi Beta Kappa</i>	Since 2022
<i>Sigma Xi</i> , The Scientific Research Honor Society	Since 2022
<i>Psi Chi</i> , International Honor Society in Psychology	Since 2021

HONORS AND AWARDS

Research Award – \$750 <i>Diverse Intelligences Summer Institute</i>	2024
The Jamie Nisse Greenberg Philosophy Prize – \$900 <i>Vassar College</i>	2022
Best Technical Write-Up <i>Mid-Hudson IEEE Undergraduate Capstone Project Awards</i>	2022

SCHOLARSHIPS, FELLOWSHIPS, AND GRANTS

Cognitive and Information Sciences Fall Fellowship – \$22,500 <i>University of California, Merced</i>	2023
Chancellor's Recruitment Fellowship – \$45,000 <i>University of California, Merced</i>	2022 – 2023
*Foreign Language and Area Studies (FLAS) Fellowship – \$22,500 + tuition/fees <i>U.S. Department of Education</i>	2022 – 2023
Adolph Sutro Fellowship – \$10,000 <i>Vassar College</i>	2022
Critical Language Scholarship for advanced Japanese, alternate <i>U.S. Department of State; American Councils for International Education</i>	2022

* Awarded, but declined

Frances Lehman Loeb 1928 Scholarship – \$44,000 <i>Vassar College</i>	2021 – 2022
Research Award – \$4,000 <i>Vassar College</i>	2021
Frances Lehman Loeb 1928 Scholarship – \$44,000 <i>Vassar College</i>	2020 – 2021
Undergraduate Research Summer Institute – \$5,000 <i>Vassar College</i>	2020
Frances Lehman Loeb 1928 Scholarship – \$42,500 <i>Vassar College</i>	2019 – 2020
Undergraduate Research Summer Institute – \$5,000 <i>Vassar College</i>	2019
1956 Memorial Scholarship – \$42,000 <i>Vassar College</i>	2018 – 2019

WORKSHOPS AND TRAINING PROGRAMS

Mathematics of Intelligences <i>Institute for Pure and Applied Mathematics, University of California, Los Angeles</i>	2024
Complexity-GAINs International Summer School (Topic: Intelligence and Representation) <i>Isaac Newton Institute for Mathematical Sciences, University of Cambridge</i>	2023
Diverse Intelligences Summer Institute <i>University of St. Andrews</i>	2023
Key Connections <i>The Phi Beta Kappa Society</i>	2022
Pittsburgh Summer Program in Philosophy of Science and Specialized Sciences <i>University of Pittsburgh; Carnegie Mellon University</i>	2020

WORK EXPERIENCE

Teaching Assistant, Philosophy Department <i>University of California, Merced</i>	2024
Teaching Assistant, Cognitive Science Department <i>Vassar College</i>	2021 – 2022
Research Mentor, Undergraduate Research Summer Institute <i>Vassar College</i>	2021
Research Assistant, Cognitive Science Department <i>Vassar College</i>	2018 – 2021

INTERNSHIPS

Intern, Cognitive Science Department <i>Vassar College</i>	2021 – 2022
Research Fellow, Undergraduate Research Summer Institute <i>Vassar College</i>	2019, 2020

SERVICE

Peer Reviewer <i>Journal of Experimental Psychology: General</i>	2024
Graduate Student Co-Chair, Cognitive and Information Sciences Department <i>University of California, Merced</i>	2023 – 2024
Research Mentor, Learning Aligned Employment Program <i>Undergraduate Research Opportunities Center, University of California, Merced</i>	2023 – 2024
Editor, Vassar College Journal of Philosophy <i>Vassar College</i>	2018 – 2019

SKILLS

Technical:	Neural networks, Reservoir computing, Bayesian statistics, Semantic networks
Computer:	Python, R, JavaScript, jsPsych, HPC parallel computing