

Ravi Francesco Srinivasan

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EDUCATION

University of California Berkeley <i>Neuroscience Ph.D. Student</i>	Berkeley, CA Aug. 2024 – present
Harvard University, Kreiman Lab <i>Master Thesis</i>	Boston, MA Mar. 2023 – Sep. 2023
Eidgenössische Technische Hochschule Zürich (ETHZ) <i>Master in Computer Science</i>	Zürich, Switzerland Sep. 2021 – Oct. 2023
École Polytechnique Fédérale de Lausanne (EPFL) <i>Exchange student in the Computer Science bachelor program</i>	Lausanne, Switzerland Feb. 2021 – Jul. 2021
Politecnico di Milano <i>Bachelor of Science in Engineering of Computing Systems</i>	Milan, Italy Sep. 2018 – Sep. 2021

PROFESSIONAL EXPERIENCE

Harvard Medical School - Boston Children's Hospital <i>Graduate Research Assistant</i> <ul style="list-style-type: none">Conducting research at the Kreiman Lab on compositional reasoning in machine learning models and humans.	Boston, U.S.A. Oct. 2023 – Jan. 2024
Brain, Minds and Machines Summer Course <i>Student</i> <ul style="list-style-type: none">Conducted research on compositional visual reasoning.	Woods Hole, MA Aug. 2023
IBM Research <i>Research Intern</i> <ul style="list-style-type: none">Studied forward learning rule using theoretical and analytical approaches.	Zürich, Switzerland Jul. 2022 – Feb. 2023

SELECT LIST OF PROJECTS

<i>Investigating compositionality using first order logic</i> <ul style="list-style-type: none">Developed a first-order logic framework to formally describe scenes.Currently investigating machine generalization using the generated dataset.	Aug. 2023 – present
<i>Models of working memory</i> [1] <ul style="list-style-type: none">Developed a biologically-inspired Hebbian attractor model of working memory.Analysed the model performance in the memory matching game and matched human behavioral data.Studied properties of the model qualitatively similar to the humans' neurophysiological recordings.	Mar. 2023 – Jul. 2023
<i>Forward learning with top-down feedback</i> [2] <ul style="list-style-type: none">We propose PEPITA—a biologically plausible alternative to backpropagation.Contributed to empirical studies comparing PEPITA with other forward learning algorithms, and analytical proofs characterizing their convergence properties.	Jul. 2022 – Jan. 2023

PUBLICATIONS

- Yuchen Xiao*, Paula Sánchez López*, Ruijie Wu*, **Ravi Srinivasan**, Peng-Hu Wei, Yong-Zhi Shan, Daniel Weisholtz, Garth Rees Cosgrove, Joseph R Madsen, Scellig Stone, Guo-Guang Zhao, and Gabriel Kreiman. Neurophysiological and computational mechanisms of non-associative and associative memories during complex human behavior. *bioRxiv preprint*, 2023. doi: 10.1101/2023.03.27.534384. (Under Review)
- Ravi Francesco Srinivasan, Francesca Mignacco, Martino Sorbaro, Maria Refinetti, Avi Cooper, Gabriel Kreiman, and Giorgia Dellaferriera. Forward learning with top-down feedback: Empirical and analytical characterization. In *The Twelfth International Conference on Learning Representations*, 2024. URL <https://openreview.net/forum?id=My7lkRNnL9>.

AWARDS

ETH-D-INFK Excellence Scholarship

Scholarship awarded to the top research proposals by applicants to Master's programs.
Covers tuition for 4 semester and living expenses (CHF 41,000).

ETHZ

2021-2023

Swiss-European Mobility Programme scholarship

Awarded to top two applicants to the exchange program based on academic achievement.
Covers living expenses during exchange period (CHF 4,200).

EPFL

Feb. 2021 – Jul. 2021

Merit-Based Scholarship

Scholarship awarded to student with excellent GPA ($>29/30$) covering tuition.

Politecnico di Milano

2018 – 2021

Best Freshman Award

Awards given to top performing freshmen in each department (€1000)

Politecnico di Milano

2019