Rishabh Singhal

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Education

University of Montreal — Montreal, Canada
Ph.D. Candidate in Neuroscience — September 2022 – Present

Indian Institute of Science Education and Research Pune — Pune, India
BS-MS Dual Degree – Biology and Applied Mathematics — 2016 – 2021

Experience

- **Graduate Researcher, Ebitz Lab, University of Montreal** — September 2022 – Present
  https://ebitzlab.com/
  Investigating neural mechanisms of decision-making in exploration vs. exploitation using electrophysiology and computational modeling in non-human primates and humans.

- **Computer Vision Data Scientist, Endovision AI Ltd.** — January 2022 – July 2022
  https://www.endovisionai.com/
  Developed and deployed advanced deep neural networks for object detection and classification, enhancing accurate disease identification for a medical AI diagnostic machine.

- **Master's Project, Lab of Neural Circuits and Behavior, IISER Pune** — 2020 – 2021
  Examined the impact of environmental enrichment on nasal cavity development in mice using CT scan data and AI-driven imaging analysis.

- **Summer Intern, Watson Lab, University of Michigan** — May 2019 – July 2019
  Investigated hippocampal place cells by analyzing neural data with spike sorting and deep neural network-based tracking software for behavioral analysis.

- **Internship, Assisi Lab, IISER Pune** — May 2018 – June 2018
  Studied grid cell models and attempted to model the central complex of drosophila in silico.

- **IFCAM Summer School, IISc Bangalore** — July 2018
  Participated in the Indo-French Centre for Applied Mathematics (IFCAM) Summer School, focusing on computational neuroscience, systems biology, physiological modeling, and population dynamics.

Honors and Awards

- **UNIQUE Excellence Scholarship** — January 2024 – December 2024
  Awarded a scholarship supporting interdisciplinary research and training in artificial intelligence and neuroscience for graduate and postdoctoral students.

- **Scientific Outreach Grant, Faculty of Medicine** — November 2023
  Awarded funding to present research at the world's largest neuroscience conference – Society for Neuroscience.

- **CIRCA Outreach Scholarship** — April 2023
  Travel award granted to support interdisciplinary research presentations in brain sciences.

- **Neural Control of Movement Diversity Fellowship** — April 2023
  Travel award granted for presenting research at the Neural Control of Movement conference.

- **Artificial Intelligence Scholarship** — January 2023
  AI scholarship awarded to support research advancing neuroscience in alignment with the principles of the Montreal Declaration for Responsible AI.

- **INSPIRE Scholarship, Government of India**   August 2016 – August 2021
  Prestigious higher education scholarship awarded by the Government of India to students within the top 1% pursuing studies in the natural sciences.

Organizing, Service, and Continuing Education

- **Organized a Sponsored Reading Club on Recurrent Neural Networks in Neuroscience**
  October 2024 – Present
  Planned and led a reading club focused on applying recurrent neural networks in neuroscience, inviting participants from multiple universities.

- **Lead TA, Neuromatch Academy – Computational Neuroscience and Deep Learning Summer School**   July 2022 – August 2022
  https://neuromatch.io/

- **TA, Neuromatch Academy – Computational Neuroscience Summer School**   2021
  Served as a TA for a globally attended virtual summer school, teaching computational neuroscience and deep learning to students worldwide.

- **Elected Member, Student Council, IISER Pune**   2020 – 2021
  Elected to represent students, safeguard their rights, and help design better policies for the welfare of the IISER Pune student community.

Technical Skills

Languages: English, Hindi
Programming Languages: Python, MATLAB
Hobbies: Marathon training, badminton, AI agents

Selected Meeting Abstracts

- **Singhal, R., Hayden, B., Ebitz, R. B.** "dACC stimulation stabilizes behavior without affecting reward processing." Computational and Systems Neuroscience, Montreal, QC, Canada, April 2025.

- **Singhal, R., Hayden, B., Ebitz, R. B.** "Intracortical stimulation in dACC disrupts the onset of exploration." Society for Neuroscience, Washington D.C., USA, November 2023.

- **Singhal, R., Kehoe, H. D., Ebitz, R. B.** "Cognitive control over reflexive saccades." Society for Neural Control of Movement, Victoria, BC, Canada, April 2023.

Referees

- **Dr. Becket Ebitz**
  Assistant Professor, University of Montreal
  r.becket.ebitz@umontreal.ca

- **Dr. Matthew G. Perich**
  Assistant Professor, University of Montreal
  matthew.perich@umontreal.ca