Prasanna Vijayaraghavan, Ph.D.

Post-doctoral Fellow

McMaster University · Dr. Christian Brodbeck's lab

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Experience

Post-doctoral Fellow, McMaster University · Dr. Christian Brodbeck's lab · Current

Research Fellow, Okinawa Institute of Science and Technology · July–October 2024

Graduate Student Researcher, Cognitive Robotics Unit, Okinawa Institute of Science and Technology · 2018–2024

Graduate Rotation Student, Okinawa Institute of Science and Technology · 2017–2018

Research Assistant, UT Southwestern Medical Center · 2014–2016

Research Assistant, University of Texas at Dallas · 2013–2014

Education

Ph.D., Cognitive Robotics, Okinawa Institute of Science and Technology · 2017–2024

M.S., Applied Cognition and Neuroscience, University of Texas at Dallas · 2012–2014

B.Tech., Biotechnology, Anna University · 2008–2012

Research Interests

Cognitive science, developmental robotics, brain-inspired AI, embodied language, computational modeling, metabolic neuroscience, and the Free Energy Principle.

Skills

Methods: Embodied AI, explainable AI, computational modeling, machine learning, neural networks, computer vision, planning, HPC, ROS. **Programming:** Python, R, MATLAB, C++, HTML/CSS/JavaScript. **Libraries:** PyTorch, CUDA, JAX, TensorFlow, NumPy, SciPy, Seaborn, pandas, h5py, OpenCV. **Tools:** Git, Docker, Google Cloud, Hugging Face, Gazebo, CoppeliaSim, LaTeX, VS Code.

Languages

English (bilingual), Tamil (native), Japanese (intermediate), Hindi (intermediate), French (beginner).

Selected Publications

1. Matsumoto, T., **Vijayaraghavan, P.**, & Tani, J. (2026). Goal-Directed Latent Variable Inference: A Unified Active Inference Framework for Embodied Intelligence in Continuous Spatiotemporal Domains. *Topics in Cognitive Science*, e70081. doi:10.1111/tops.70081
2. Vijayaraghavan, P., Queisser, J. F., Flores, S. V., & Tani, J. (2025). Development of compositionality through interactive learning of language and action of robots. *Science Robotics, 10*. doi:10.1126/scirobotics.adp0751
3. Mani, B. K., Castorena, C. M., Vianna, C. R., Lee, C. E., Metzger, N. P., **Vijayaraghavan, P.**, et al. (2020). Combined loss of ghrelin receptor and cannabinoid CB1 receptor in mice decreases survival but does not additively reduce body weight or eating. *Neuroscience, 447*, 53–62. doi:10.1016/j.neuroscience.2019.09.005
4. Rodriguez, J. A., Bruggeman, E. C., Mani, B. K., et al., **Vijayaraghavan, P.**, et al. (2018). Ghrelin receptor agonist rescues excess neonatal mortality in a Prader-Willi syndrome mouse model. *Endocrinology*. doi:10.1210/en.2018-00801
5. Mani, B. K., Castorena, C. M., Osborne-Lawrence, S., **Vijayaraghavan, P.**, et al. (2018). Ghrelin mediates exercise endurance and the feeding response post-exercise. *Molecular Metabolism, 9*, 114–130. doi:10.1016/j.molmet.2018.01.006
6. Mani, B. K., Osborne-Lawrence, S., **Vijayaraghavan, P.**, et al. (2016). β1-Adrenergic receptor deficiency in ghrelin-expressing cells causes hypoglycemia in susceptible individuals. *Journal of Clinical Investigation*. doi:10.1172/JCI86270

Complete publication record: ORCID profile.