Prannoy Namala

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Education

University of Maryland, Ph.D. in Mechanical Engineering — Expected May 2026

- GPA: 3.8
- **Research Interests:** optimal control, multi-agents systems, reinforcement learning, differential game theory

University of Maryland, M.Eng. in Robotics — May 2022

- GPA: 3.7
- **Independent Study Project:** Improving HRI Capabilities for Serving Robots by Combining Visual and Aural Cues

Amrita Vishwa Vidyapeetham,B.Tech. in Mechanical Engineering — May 2020

- GPA: 8/10. Graduated with Distinction
- **Capstone Project:** Design for Additive Manufacturing: A Case Study on Lattice Structure FDM Printing (via student exchange program at Northern Illinois University)

Experience

Graduate Assistant, University of Maryland – College Park, MD — May 2021 – Present

- Previously appointed as Research Assistant (2021-2024); currently serving as Teaching Assistant (2024-Present) while continuing independent research.
- Investigate scalable models for decision-making in multi-robot teams.
- Develop and test machine learning models for metareasoning for multi-agent reach-avoid games.
- Research explainable and distributed control for multi-agent games.
- Mentored an undergraduate student on ML and EDA techniques, leading to a research paper.
- Presented research at **IROS 2023**, **ASME IDETC 2024** and **SPIE Defense + Commercial Sensing 2024**
- Designed algorithm selection strategies for perimeter games, which outperformed the baseline in 94% of the cases while being computationally efficient.

Robotics Intern, Kick Robotics LLC – College Park, MD — Jan 2022 – May 2022

- Benchmarked four different perception sensors for the warehouse robot to understand their optimal operating conditions.
- Contributed to designing and manufacturing a Warehouse Robot with off-the-shelf parts.
- Developed and performed field experiments for an autonomous surface vessel.

Publications

P. Namala and J. W. Herrmann, "To assign or not to assign: A metareasoning framework for efficient sub-game computation in multi-agent pursuit-evasion games," **Accepted** to *IEEE Int. Symp. Multi-Robot and Multi-Agent Systems (MRS)*, 2025.

P. Namala and J. W. Herrmann, "Learning-based metareasoning for decision-making in multi-agent pursuit-evasion games," in *Proc. SPIE*, vol. 13016, Orlando, FL, USA, Jun. 2024, Art. no. 130160X. doi: 10.1117/12.3016736.

P. Namala, A. Vaidya, and J. W. Herrmann, "Data driven metareasoning for defending a perimeter against cooperative intrusion," in Proc. ASME Int. Des. Eng. Tech. Conf. Comput. Inf. Eng. Conf. (IDETC/CIE), vol. 2B, 44th CIE Conf., Washington, DC, USA, Aug. 25–28, 2024, V02BT02A039. doi: 10.1117/12.3016736 .

Skills

Programming: Python, PyTorch, PyTorch Geometric, TensorFlow, ROS/ROS2, C++

RL Libraries: Ray RLlib, Open AI Gymnasium, PettingZoo, TorchRL; StableBaselines3

Tools: Git, Docker/Singularity, Linux, MATLAB

Languages: English (Fluent), Telugu (Fluent), Hindi (Fluent)

Embedded Systems: Raspberry Pi, NVIDIA Jetson Nano, 2D LIDAR, Encoders, Onboard cameras; Experience with YOLO object detection and lidar-based navigation on mobile robots

Awards

Dean's Fellowship award from Department of Mechanical Engineering — Aug 2025

Pathway to Ph.D. award from Maryland Robotics Center — Jan 2022

Pathway to Internship award from Maryland Robotics Center — Jan 2022

Professional Service

Reviewed two research papers for the **ASME Journal of Autonomous Vehicles**.

Teaching and Mentorship

Teaching Assistant, University of Maryland — Fall 2024 - Present
Supported course delivery, graded assignments, and held office hours for junior-level Engineering students.

Mentor, High School Research Student — Fall 2025 - Present
Guiding a high school student on reinforcement learning using multi-agent video game environments, focusing on baseline algorithm development and experimentation.

Mentor, CS Freshman — Academic Year 2023
Mentored a first-year Computer Science student on introductory machine learning concepts which was applied to pursuit-evasion games.