

PRISHITA RAY

Phone: (+91) 7892681089 ◊ Email: prishita.r85@gmail.com

Homepage: [Portfolio](#)

[Google Scholar](#) ◊ [Github](#) ◊ [LinkedIn](#) ◊ [Twitter](#)

EDUCATION

[Cornell University](#)

Dec 2022

M.Eng. in Computer Science (spec. in Robotics and Machine Learning)

GPA: 3.75/4.0

Related courses: *Mathematical Foundations of ML, Introduction to Computer Vision, Foundations of Robotics, Principles of Large-Scale ML Systems, Digital Systems Design using Microcontrollers, Grad. Special Topics in Statistics (Graphical Models and Causal Discovery)*

[Vellore Institute of Technology, Vellore](#)

June 2021

B.Tech. in Computer Science and Engineering

GPA: 9.1/10.0

Related courses: *Data Structures and Algorithms, Natural Language Processing, Robotics and its Applications, Reinforcement Learning, Machine Learning [1], Data Mining, Compilers, Databases, Networks, Operating Systems, Statistics, Computer Architecture, Digital Logic and Design, Theory of Computation, Microprocessors*

RESEARCH INTERESTS

I am interested in exploring and improving **decision-making algorithms** to ensure better **robustness and task performance** in autonomous systems and robots for a wide variety of applications. Also would like to leverage recent trends in **foundation models** to aid in these learning strategies.

RESEARCH AND DEVELOPMENT EXPERIENCE

I. Software Test Development Engineer- Isaac Product Team

Oct 2025 - Present

NVIDIA Robotics

- Working with the [NVIDIA Isaac](#) product team to develop, test and optimize robotics applications on Jetson compute platforms.
- Developing comprehensive test plans for navigation and manipulation tasks across **IsaacSim** and robotic platforms such as UR3 Cobot and Segway Nova Carter.

II. Foundation Models for Personalized Medication Message Design and Diabetes Management

May 2024 - May 2025

Johns Hopkins University

- Worked at the [Center for Digital Health and Artificial Intelligence](#) to develop **foundation models** for glucose prediction in diabetes patients and personalized medication message design based on different patient cohort type pools.

III. Curriculum Learning methods to improve environment robustness of Autonomous Driving RL Agents

Aug 2022 - Present

Supervisors: Prof. Mark Campbell

Cornell University

- Developed two **Curriculum Learning** methods to train **autonomous driving RL agents** that are robust to adversarial environments in an obstacles variant of Open AI Gym CarRacing.

- i. Selected robust curricula via **Bayesian Optimization** over the curriculum–reward function, evolving environment parameters (turn rates, obstacle probabilities). Published at [Learning Robot Super Autonomy workshop, IROS 2023](#) [2].
- ii. Designed a **gradient-based** automatic curriculum generation algorithm for sample-efficient evolution of environment parameters difficulty.
- Also applied **parameter-based** and **policy embedding-based** distribution shift regularizations to the above. Under Submission

IV. Performing Human Shadow Detection for Camera-Based Privacy-Preserving Human-Robot Interactions Feb 2022 - Aug 2024

Supervisors: Prof. Guy Hoffman Cornell University

- Proposed a method to **preserve privacy** while tracking humans in real-time home environments. **Physically obstructed** the Reachy humanoid robot's **camera input** to obtain a low-fidelity version.
- Transfer learned an EfficientNet-v2 model and deployed on the robot using **computer vision** methods.
- Published at [IEEE RO-MAN 2024](#) [3] as part of the [NSF NRI:INT: Ad-Hoc Collaborative Human-Robot Swarms](#) project

V. Scheduling Strategies to control flooding in a Renewable Energy Powered Automatic Water Dam Control System Jan 2021 - Jun 2021

Supervisors: Prof. Geraldine Bessie Amali D. Vellore Institute of Technology

- Experimented with **three scheduling algorithms** (RL-based(*) and Evolutionary Algorithms): Soft Actor Critic with Emphasized Recent Experience and Prioritized Experience Replay (SAC+ERE+PER)*, Proximal Policy Optimization (PPO)* and Natural Evolution Strategies (NES).
- Ensured maximum usage of available **renewable resources with lesser pollution** while controlling flooding optimally.
- Published at [IEEE ICAIGE 2023](#) [4].

VI. Automated Multimodal Annotation using FrameNet Jun 2020 - Aug 2020

Supervisors: Prof. Tiago Timponi Torrent, Prof. Ely Edison Matos UFJF, Brasil

- Designed a **semi-automated annotation framework** for **multimodal corpora**, with the core and non-core frame elements present in the FrameNet database.
- Published at the [LAW-XVI LREC 2022 workshop](#) [5] and funded by the Google Summer of Code program ([GSoC 2020](#)) (in acknowledgements).

VII. Malware Classification with Reduced Label Dependency Dec 2019 - Sep 2021

Supervisors: Prof. Kakelli Anil Kumar Vellore Institute of Technology

- Performed multiclass classification of **network intrusion malwares** by feature extraction from log files using variants of autoencoders and the FSFC Clustering algorithm. Classified them using **limited labeled examples** for training through Ladder Networks.
- Published at [ICIIC 2021](#) [6] and received the Best Paper Award for presentation.

VIII. Stochastic Games for Energy Management in Microgrids May 2019 - July 2019

Supervisors: Prof. Shalabh Bhatnagar Indian Institute of Science

- Proposed a **Multi-Agent Reinforcement Learning** solution for **demand and supply management in Microgrids** using the RapSim simulator, using two DQN networks for scheduling of jobs (ADL Network) and trading energy (ET network) through a Dynamic Pricing scheme.
- Published at the [IEEE-PES ISGT Europe 2020](#) [7] and funded through the Indian Academy of Sciences Summer Research Fellowship Programme ([IAS SRFP 2019](#)).

PUBLICATIONS

- [1] **Ray, Prishita**, R. Kaluri, T. Reddy, K. Lakshmanan, *et al.*, “Contemporary developments and technologies in deep learning-based iot,” in *Deep learning for internet of things infrastructure*, CRC Press, 2021, pp. 61–82. DOI: [10.1201/9781003032175-3](https://doi.org/10.1201/9781003032175-3).
- [2] R. Banerjee*, **Ray***, **Prishita**, and M. Campbell, “Improving environment robustness of deep reinforcement learning approaches for autonomous racing using bayesian optimization-based curriculum learning,” *Learning Robot Super Autonomy Workshop, IROS 2023*, 2023. DOI: [10.48550/arXiv.2312.10557](https://doi.org/10.48550/arXiv.2312.10557).
- [3] Y. Hu*, **Ray***, **Prishita**, and G. Hoffman, “Performing human shadow detection for camera-based privacy-preserving human-robot interactions,” in *2024 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*, IEEE, 2024, pp. 1013–1020. DOI: [10.1109/RO-MAN60168.2024.10731324](https://doi.org/10.1109/RO-MAN60168.2024.10731324).
- [4] **Ray, Prishita** and G. B. A. D., “An intelligent rl-based scheduler to control flooding in a renewable energy powered automatic water dam control system,” in *2023 IEEE International Conference on Artificial Intelligence Green Energy (ICAIGE)*, 2023, pp. 1–6. DOI: [10.1109/ICAIIGE58321.2023.10346395](https://doi.org/10.1109/ICAIIGE58321.2023.10346395).
- [5] F. Belcavello, M. Viridiano, E. Matos, and T. Timponi Torrent, “Charon: A framenet annotation tool for multimodal corpora,” in *Proceedings of the 16th Linguistic Annotation Workshop (LAW-XVI) within LREC2022*, Marseille, France: European Language Resources Association, Jun. 2022, pp. 91–96. [Online]. Available: <https://aclanthology.org/2022.law-1.11>.
- [6] **Ray, Prishita**, T. Nandan, L. Anne, and K. A. Kumar, “A new combined model with reduced label dependency for malware classification,” in *3rd International Conference on Integrated Intelligent Computing Communication Security (ICIIC 2021)*, Atlantis Press, 2021, pp. 23–32. DOI: [10.2991/ahis.k.210913.004](https://doi.org/10.2991/ahis.k.210913.004).
- [7] S. Nayak, C. A. Ekbote, A. P. S. Chauhan, R. B. Diddigi, **Ray, Prishita**, A. Sikdar, S. K. R. Danda, and S. Bhatnagar, “Stochastic game frameworks for efficient energy management in microgrid networks,” in *2020 IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe)*, IEEE, 2020, pp. 116–120. DOI: [10.1109/ISGT-Europe47291.2020.9248952](https://doi.org/10.1109/ISGT-Europe47291.2020.9248952).

ACHIEVEMENTS/HONORS

Academic Excellence Recognition (GPA: 3.9/4.0), CS department, Cornell University	<i>Spring 2022</i>
Best Paper Award, ICIIC Conference 2021	<i>Aug 2021</i>
Google Summer of Code 2020 (2.77% acceptance rate), Google	<i>Summer 2020</i>
Summer Research Fellowship (0.83% acceptance rate), Indian Academy of Sciences	<i>Summer 2019</i>
VIT Academic Merit Scholarship (Branch Rank 4, GPA: 9.6/10.0), VIT	<i>Spring 2018</i>
National Talent Search Examination (NTSE) Scholarship (State Rank 19)	<i>Summer 2015-2016</i>

PROFESSIONAL EXPERIENCE/OPEN SOURCE CONTRIBUTIONS

NVIDIA Robotics, Software QA Test Development Engineer	<i>Oct 2025-Present</i>
JHU CDHAI, Research Assistant	<i>May 2024-May 2025</i>
American Express, Engineer III	<i>Apr 2023-Jan 2024</i>
HARMAN International, Associate ML Engineer	<i>Sep 2021- Jan 2022</i>
VISA Inc., Software Engineering Intern	<i>May 2020- Jul 2020</i>
Google, Google Summer of Code Program	<i>Jun 2020- Aug 2020</i>
Hewlett Packard Enterprise, CTY Program Intern	<i>Jan 2020- Jun 2020</i>
Samsung R&D Institute, PRISM Program Intern	<i>Oct 2019- Jul 2020</i>

SERVICE

Peer Reviewer, [IEEE RO-MAN Conference](#)
Peer Reviewer, [Journal of Network and Systems Management](#)-
Special issue for Cybersecurity management in the era of AI.

2024
2020

SKILLS/HOBBIES

Programming Languages

Python, L^AT_EX, C/C++, MATLAB, HTML

Machine Learning Tools

PyTorch, Tensorflow, ROS2, MoveIt2, RViz, SB3, JAX

Research Areas

Robotics, RL, Computer Vision, Foundation Models

Robotic Platforms

Rechy by Pollen Robotics, UR3 Cobot, Nova Carter

Simulators

Mujoco, OpenAI Gym, libfranka-sim, Isaac Sim, Rapsim

Microcontrollers and Microprocessors

Jetson Nano, Raspberry Pi 4B, Arduino Uno, Intel 8086

Hobbies

piano/keyboard, dancing, traveling, art