Arnav Vasudev

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Education

Cornell University — Ithaca, New York

Bachelors of Science in Computer Science; **GPA: 3.9** — Aug 2022 – May 2026 (Expected)

Undergraduate coursework: Object Oriented Programming, Algorithms, Machine Learning, Deep learning, Linear Algebra, Numerical Analysis, Computer System Organization

Graduate coursework: Distributed Systems, Reinforcement Learning

Experience

Portal Lab — Ithaca

Research Intern — Jun 2024 – Present

- Worked on efficiently training and deploying end-to-end robot policies for performing pick-and-place tasks in cluttered environments, leveraging a sim-to-real approach.
- Trained an oracle reinforcement learning policy with privileged simulation data in Mujoco using PyTorch, then distilled it into a vision-based policy that uses 3D point clouds.
- Transferred and deployed the trained policy to a real robot using ROS2, achieving reliable real-world performance.

TATA Capital — Mumbai

Data Science Intern — Jun 2023 – Aug 2023

- Developed a targeted marketing model to predict loan products for consumers using demographic and financial datasets.
- Cleaned, analyzed, and integrated millions of financial records across multiple data sources using Spark, SQL, Pandas and Python to compile the data for modeling.
- Trained and fine-tuned predictive models in Scikit-learn, utilizing Logistic Regression, SVMs, and Random Forest to perform accurate classification based on consumer profiles.

Emprise Lab — Ithaca

Research Assistant — Jan 2023 – Dec 2023

- Worked on a team developing compliant controllers for a robotic arm to enhance adaptability and safety during human-robot interaction.
- Implemented anomaly detection in the ROS hardware interface (C++) by monitoring force and torque levels to trigger a safe emergency stop based on current conditions.
- Improved the ROS hardware interface of the arm by addressing bugs, implementing gravity compensation and creating a CI pipeline for quick testing.

Projects and Awards

Mathematical Contest in Modelling (2024) | *MCM*

- Winning team in Cornell MCM and represented Cornell at the international MCM
- The competition required applying mathematical and algorithmic principles to solve a modeling problem, followed by writing a detailed report describing our approach.

Tracking-by-detection | *GitHub*

- Utilized transfer learning to train a YOLOv4 based neural network to detect soccer players in live footage.
- Implemented a Kalman filter to reduce system latency allowing for real-time tracking.

Skills

Languages: Python, Java, C, C++, C#, OCaml, Javascript, SQL, RISCV ASM

Technologies: Git, Linux, Docker, Kubernetes, ROS, Spark, PyTorch, HuggingFace, CUDA, OpenCV, Hadoop, WandB

Interests: Running, Poker, Board Games and Soccer