

Samay Pashine

samaypashine7@gmail.com | [LinkedIn](#) | [GitHub](#) | +1 (765)-767-2457

Education

Tufts University, Master of Science in Computer Science (GPA: 3.62 / 4.0)

Jan 2022 - Dec 2023

- **Relevant Courses:** Algorithms, Reinforcement Learning, ML, AI, Big Data, Software Engineering, Prob. Robotics, Cybersecurity.

Experience

Tufts University

Jan 2022 - Aug 2023

Graduate Research Assistant @ MuLIP Lab

- Implemented knowledge transfer protocols and streamlined sensory data processing for robots with varying morphologies; reduced operational inefficiencies by 32.67% and enhanced productivity across different research groups.
- Built a transformer model for tactile data to experiment with knowledge transfer, analyzing the modality effectiveness and developed a feature extractor model resulting in a approx 10.03% improvement in data representation for tools and objects classification.
- Optimized the codebase for robot control, and collected over 5.3 TB of sensory data from 5 data sources involving 54,000 tool-based interactions for robots with 15 different objects taking 450 hrs.

Indian Institute of Technology

Aug 2021 - Dec 2021

Machine Learning Engineer @ Sustainable Technologies Laboratory

- Headed a team of 3 for the creation of a comprehensive framework in response to the imperative for precise rapid crop yield prediction.
- Designed a statistical emulator for forecasting multiple crop yields, making use of 15 years' worth of global climate and soil data.
- Engineered a solution to extract climate data, harmonize soil information, and integrate static crop yield data from diverse sources.
- Achieved an outstanding 0.68% loss rate in the models, significantly enhancing the precision and dependability of crop yield forecasts, contributing to more informed decision-making in agriculture and related industries in milliseconds instead of hours.

Eyecan

Jan 2021 - Dec 2021

Data Scientist

- Led the Data Science department of 5 developers to develop features assisting visually impaired people with day-to-day tasks.
- Built and enhanced a cutting-edge currency recognition system, leveraging transformer models to identify currency at a rate of 15 FPS.
- Innovated a color-sensing capability and user-guidance system using cutting-edge transformers that ensures for dominant colors detection and precise document scanning, integrating real-time feedback at 10 FPS to elevate the application experience.
- Conducted a case study on enhancing real-world mobility, investigating monocular distance estimation for navigation, identifying its limitations, and transitioning to a cost-effective, real-time object-to-camera distance calculation through Stereo vision's disparity map.

Robro Systems Private Limited

Jun 2020 - Dec 2020

Machine Learning Engineer Intern

- Improved the dental inspection system to the speed of 120 pieces/min with 93.6% accuracy, optimizing the packaging line by 60%.
- Developed ROS packages for camera integration and installed computer vision softwares for product inspections at three client sites.
- Researched & Developed better solutions to approach counting objects systems for packaging industries and achieving over 98% accuracy in counting objects and reducing the packaging cost by 40% and significantly increasing customer satisfaction.

Skills

- **Programming Languages:** Python, C, C++, Java, SQL, Shell Scripting.
- **Libraries & Frameworks:** Transformers, LLM, PyTorch, TensorFlow, TFLite, OpenCV, PySpark, Pandas, Docker, Kubernetes, ROS.
- **Operating Systems & Cloud Platform:** Ubuntu, Kali, CentOS, Windows, Arch, Google Cloud, AWS (EC2 & Sagemaker)
- **Additional Skills:** Git, HTML, PHP, Server Administration, Penetration Testing, WordPress, Slurm, Latex, Visual Studio.

Projects

- **Tracking and Recognition AI for LBW Evaluation and Review [Private]**
 - Pioneered a real-time cricket ball and stump tracking system using Segformer, a transformer-based semantic segmentation model, to track the cricket ball and stumps within video frames. Record the ball positions throughout the period to ascertain batsman out/not-out decisions, thereby bolstering umpire decision-making and elevating match fairness and accuracy.
- **Twin Universal Robot Boosting Operation [Repository]**
 - Engineered a general solution to augmented controls via UR driver code modifications, MoveIt configurations and controller settings for precision and responsiveness, thereby making the UR5 arms accessible to researchers, establishing a solid foundation for research by addressing the critical need for controlling multiple Robots by eliminating reliance on simulations.