

Chetan Reddy Narayanaswamy

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Education

Stanford University, CA

Sept 2024 - Mar 2026

MS in Mechanical Engineering (Robotics) | GPA: 4.0/4.0

Courses: Deep Learning for Computer Vision | Convex Optimisation | Robot Autonomy | Optimal and Learning Based Control
Teaching Assistant, Computer Science Dept - Decision Making Under Uncertainty (CS238)

Indian Institute of Technology Madras, India

Aug 2019 - Jun 2024

Masters (M.Tech) in Machine Learning, Bachelors (B.Tech) in MechE | CGPA: 9.48/10

Courses: Data Structures and Algorithms | Machine Learning | Reinforcement Learning | Kinematics and Dynamics of Machinery

KTH Royal Institute of Technology, Sweden

Aug 2022 - Jan 2023

Semester Exchange (Robotics) | School of Computer Science | GPA: 5.0/5.0

Courses: Safe Robot Planning and Control | Advanced Deep Learning | Introduction to Robotics | Sustainable Development

Skills

- ML/Robotics: Robot Learning, Path Planning, 3D Computer Vision, Optimal Control, RL, Imitation Learning
- Programming: Python, C++, PyTorch, OpenCV | Other Tools: ROS/ROS2, Isaac Sim, PyBullet, Gazebo, Git, Linux, Plotly, W&B

Professional and Research Experience

NVIDIA x Stanford Open-H Embodiment Robotics Initiative

Stanford, CA

Open Source Dataset Generation for Healthcare Robotics Foundation Models | Skills: Python, C++, ROS

Sep 2025 - Jan 2026

- Helped develop and validate the official dataset standardization guidelines in collaboration with labs in NVIDIA, JHU and TUM
- **Engineered an automated data collection framework** in LeRobot format, contributing to open-source robot learning
- Collecting and curating 2,000+ high quality robotic surgery trajectories (needle passing, tissue retraction, suturing)

Machine Learning Intern | MORE Inc [\[Link\]](#)

San Mateo, CA

3D Computer Vision for Robotic Bin Picking | Skills: Pytorch, CI/CD, Git, Plotly, W&B

Jul 2025 - Sep 2025

- Designed custom lightweight, **geometry-aware CNN architectures** optimized for real-time robotic tasks.
- Developed **custom PyTorch operators** with learnable parameters to process 3D data, along with an **interactive visualization dashboard** for hyperparameter tuning and model evaluation.
- Reduced model size by 99% compared to conventional CNNs on in-house 3D datasets using the geometry-aware design.

Robot Learning Researcher | CHARM and IPRL Labs, Stanford University [\[Link\]](#)

Stanford, CA

Advisors: Prof. Allison Okamura and Prof. Jeannette Bohg | Skills: C++, Isaac Sim, ROS, Imitation Learning

Jan 2025 - Jun 2025

- Built a three-arm teleoperation framework for the da Vinci Surgical Robot system using a Phantom Omni for the auxiliary arm handling coordinate transforms for spatial alignment
- Integrated the robot SDK with ROS drivers and developed ROS Packages for seamless communication and synchronised video and proprioceptive data collection
- Trained and deployed an ACT (Action Chunking with Transformer) model reducing collaborative task time by 55%

Machine Learning Intern | Adobe Research [\[Link\]](#) **[USPTO Patent Filed]**

Bengaluru, India

Clustering Users based on Causal Relationships | Skills: Causal AI, Bayesian Statistics, Tensorflow

May 2023 - Aug 2023

- Developed a novel iterative predictive clustering algorithm by integrating a bayesian network based loss function
- Achieved an adjusted rand index of 0.84 on a synthetic dataset generated from known causal structures for each cluster

Projects

Mapping and Object Identification for Search and Rescue with UGV [\[Link\]](#)

Geneva, Switzerland

ETH Robotics Summer School Challenge | Skills: Path Planning, SLAM, Object Detection, ROS2, Docker

Jun 2025

- Worked with autonomous mobile robots in a Swiss military site with realistic search and rescue environments
- Tuned and deployed the [TARE](#) exploration planner and YOLOv5 object detection on a rough terrain unmanned ground vehicle
- Generated a 3D point cloud map of an unknown collapsed building with locations of key desired objects

Real Time Video Segmentation for Autonomous Robotic Manipulation [\[Link\]](#)

Stanford, CA

Deep Learning with Computer Vision, Stanford | Skills: PyTorch, OpenCV, Real Time Inference Optimisation

May 2025 - Jun 2025

- Used SAM2 to generate high-quality offline segmentation masks on a curated dataset and trained a lightweight U-Net on it
- Achieved 30Hz real-time inference with a Dice score of 95.6% (60x faster compared to SAM2) thus supporting robotic tasks

Vision-Based Controller for Drone Swarm | All-India Industry Robotics Challenge [\[Link\]](#)

Chennai, India

IIT Madras Robotics Team | Skills: C++, OpenCV, ROS, PID Control, Object Tracking

Dec 2022 - Feb 2023

- Transformed the existing ROS-based communication framework in C++ into a Python API making it platform-independent.
- Implemented multi-axis PID controller for precise drone hovering and vision-guided motion with 0.05m accuracy