

KEIVALYA B. PANDYA

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Academic Qualifications

Northeastern University

Master of Science in Robotics | Concentration: Computer Science — 4.0 GPA

December 2026

Boston, Massachusetts

Birla Vishvakarma Mahavidyalaya

Bachelor of Technology — 3.60 GPA

June 2023

Vallabh Vidyanagar, Gujarat

Robotics Experience

Northeastern University

Research Apprentice

Boston, MA

January 2025 – Present

- Developing StretchAI under the supervision of Prof. Zhi Tan where we aim to deploy state-of-the-art policies using Reinforcement Learning methods such as Imitation Learning, NLP, Diffusion policy, π_0 , ViT-GPT2, ACT, and build on top of them for end-effector manipulation.
- Currently improving on existing policy optimization techniques of Vision-Language-Action models.
- Selected in 40 scholars out of 20,000+ students for a fully-funded research at Khoury College of CS.

Graduate Teaching Assistant

January 2025 – Present

- CS 5180 – Reinforcement Learning and Sequential Decision Making, taught by Prof. Robert Platt.

Birla Vishvakarma Mahavidyalaya

Robotics Engineer and Full-stack Developer

Vallabh Vidyanagar, Gujarat

December 2023 – August 2024

- Developed a modular, centralized control software using OPC-UA communication protocol to manage N static stations and M (real-time AMRs control), enhancing system coordination, optimization of unmanned production assembly line, & reducing operational delays.
- Implemented HectorSLAM and Cartographer from source for navigation.

Skills

Languages: Python, C/C++, MATLAB, C#, JavaScript, SQL

Specialization: ML, Perception, Vision-Language-Action Model, Deep Learning, NLP, RL

Frameworks/Libraries: Pytorch, Tensorflow, Keras, Stable Diffusion, Transformers

Selective Projects

Franka Robot Arm Manipulation using Behavioral Cloning | *Pytorch, MoJoCo*

- Leveraged and proposed **3-Phase Soft-Actor Critic** for long-horizon task handling continuous action spaces, integrated with MoJoCo simulation for real-time interaction with a **9-DoF Franka** robotic arm.
- Developed a system that autonomously performs cooking-related tasks, using an **end-to-end robot learning** approach trained on **human demonstration** and refined with proposed algorithm.

Mapping with RBPF and Adaptive Sampling | *Perception, Optimization, Path Planning*

- Developed an **improved Rao-Blackwellized Particle Filter SLAM with adaptive sampling**, reducing computational overhead by 30% while maintaining mapping accuracy.

Publications

Research Papers

- Application of digital twin in space engineering using AR and IOT technology, **ISSN 0011-3891**
- PCB Fault Detection in Real-Time Using YOLOv5, **ISSN 2320-088X**
- A comprehensive overview of artificial intelligence applications in basketball, **ISSN 2247 - 806X**

Patents

- IN Patent 356336-001/125869, “**AI-based Bio-electro-mechanical Control Prosthetic Limb**”