

Rushiraj Gadhvi

✉ rushiraj.gadhvi@plaksha.edu.in ☎ +91 94997 66190 🔗 [gadhvirushiraj.github.io](https://github.com/gadhvirushiraj) in [LinkedIn](#) 🐙 [Github](#)
🎓 [Google Scholar](#)

Skills

Programming Languages: Proficient with Python (PyTorch, scikit-learn, LangChain), C++, and Dart

Frameworks: Flutter, Django, Next.js, FastAPI

Other: Docker, Bash, Git, Linux, Scientific Writing, Electronics Prototyping, RaspberryPi, Arduino, PCB Design

Experience

RESEARCH INTERN @**Robotics Lab, Plaksha University** Jun 2025 – Present

- Working with Prof. Sandeep Manjanna on Khalasi Project to build system for Energy-Efficient Navigation for ASVs in Turbulent Vortical Fields

FOUNDER @**Housify (Techsurf Solutions Pvt. Ltd.)** Jan 2025 – Present

- Building a FinTech application to streamline and provide transparency to residential societies administration processes

RESEARCH INTERN @**HTI Lab, Plaksha University** Jan 2024 – Feb 2025

- Contributed and led PosePilot and AdaptAI projects under mentorship of Prof. Sidhharth
- Published *two papers* in *top conferences* including CHI-2025

CONTRIBUTOR @**Google Summer of Code 2024** Jun – Aug 2024

- Contributed to NUMFOCUS, QuTiP: Enhanced Quantum Circuit Diagrams ([project webpage](#) 🔗)
- Improved the visualization tools for quantum circuits in the open-source QuTiP library, widely used in quantum information research

DATA SCIENCE INTERN @**BlinkX by JM Financial, Mumbai** Jun – Aug 2024

- Designed and developed an end-to-end pipeline for extracting application feature-based opinions from customer reviews to support strategic decision-making using LLMs and NLP-based clustering techniques
- Integrated LLMs and RAG techniques into existing bots, significantly improving their ability to handle complex queries and deliver more natural, human-like interactions

RESEARCH INTERN @**Physical Research Laboratory (PRL), Ahmedabad** Jun – Jul 2023

- Fine-tuned models for spectral data composition analysis using statistical techniques
- Designed and developed a Python-based spectrum visualization platform, reducing analysis time by streamlining data exploration and interpretation for large datasets

Education

Plaksha University Mohali, India
B.Tech in Computer Science & Artificial Intelligence (CSAI) 2021 – 2025

Edunova High School Ahmedabad, India
11th/12th (A-Stream: Math, Physics, Chemistry, Computer) 2019 – 2021

Projects

Khalasi 🔗 Nov 2024 – present

Energy-Efficient Navigation for ASVs in Turbulent Vortical Fields

- Designed a custom environment for a variety of flow fields and implemented reinforcement learning (RL) models to optimize navigation for autonomous surface vehicles (ASVs) in turbulent aquatic conditions.
- The model enables ASVs to strategically exploit natural currents such as vortex patterns and minimize propulsion energy required to reach the target.
- Achieved a **30% reduction in energy consumption** with **95% target-reaching accuracy**.

AdaptAI

Nov 2024 – Feb 2025

A Personalized Solution to Sense Your Stress, Fix Your Mess, and Boost Productivity

- AdaptAI is a multimodal AI system that integrates real-time data from egocentric vision, audio, and physiological signals to enhance productivity and well-being by tailoring interventions to individual needs.
- Designed a tone-adaptive conversational agent that dynamically adjusts its responses to be supportive and motivational under stress.
- Conducted a **15-participant pilot study**, demonstrating **significant gains in task throughput and user satisfaction**.

PosePilot

Aug 2023 – Feb 2024

An Edge-AI Solution for Posture Correction in Physical Exercises

- Addressed the need for a real-time, personalized posture correction system with applications in sports, rehabilitation, and fitness training.
- Implemented a lightweight BiLSTM+Attention architecture for high-speed joint error detection, along with an innovative UI that delivers real-time corrective feedback.
- Achieved **97.5% pose recognition accuracy** and **0.00138 MSE** in correction feedback, **surpassing SOTA** for recognition and released a new, high-quality **yoga video dataset**.

Achievements

- Selected for **Google Summer of Code 2024 @NUMFOCUS** — One amongst 1,220 selected globally, out of 43k+ applicants
- **AWS AI & ML Scholar Advance 2024** — One amongst 500 selected globally
- **AWS AI & ML Scholar 2023** — One amongst 2,000 selected globally, out of 70,000+ applications
- **UN Millennium Fellowship 2022** — One amongst 3,000 selected globally, out of 31,000+ applications
- **1st rank** amongst 190+ teams at **IIT Bombay E-Cell BnB Event 2022**
- Selected by **Student Startup and Innovation Policy (SSIP) 2020, Gujarat** amongst 200+ projects

Publications

PosePilot: Edge-AI Solution for Posture Correction in Physical Exercises

May 2025

Rushiraj Gadhvi, Priyansh Desai, Siddharth
arxiv.org/abs/2505.19186  (*IbPRIA 2025*)


AdaptAI: A Personalized Solution to Sense Your Stress, Fix Your Mess, and Boost Productivity

February 2025

Rushiraj Gadhvi, Soham Petkar, Priyansh Desai, Siddharth
<https://doi.org/10.1145/3706599.3720284>  (*CHI 2025*)

QuTiP 5: The Quantum Toolbox in Python

December 2024



Neill Lambert, Eric Giguère, Paul Menczel, Rushiraj Gadhvi, Franco Nori *et al.*
arxiv.org/abs/2412.04705  (*Submitted to Physics Report*)

khalasi: Energy-Efficient Navigation for ASVs in Turbulent Vortical Fields

(to be submitted)

Rushiraj Gadhvi, Sandeep Manjanna

Certifications

- Nanodegree in AWS Machine Learning Fundamentals ([Certificate](#) )
- Nanodegree in AI Programming with Python ([Certificate](#) )

Responsibilities & Volunteering

- Organized “**Hack Plaksha**” hackathons as a **core committee member** in 2022 and 2023
- **Global Admission Committee** at the **United Nations Millennium Campus Network** in 2023
- Volunteered at the **Annual Astro-Night** event in Ahmedabad for three consecutive years (2017–2019)
- Contributed as a volunteer at the **Vikram Sarabhai Community Science Centre** during 2016 and 2017