

ABHA ABHAY WADJIKAR

SOFTWARE ENGINEER

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Software Engineer with 3+ years at Apple bridging research and production through scalable systems in ML & iOS.

EDUCATION

New York University

Master of Science in Computer Science, GPA: 3.9/4.0

Sept 2024 - May 2026(Expected)

New York, USA

National Institute of Technology Karnataka

Bachelor of Technology in Computer Science and Engineering

July 2017 – May 2021

Karnataka, India

Selected Coursework: ML, Deep Learning, Bayesian Methods, RL, Computer Vision, Big Data, Databases, AI, Cloud.

WORK EXPERIENCE

Graduate Researcher, Machine Learning for Robotics

June 2025 – Present

New York University, CILVR Lab (Advisor: Prof. Lerrel Pinto)

New York, NY

- Researching **multimodal policy learning** for contact-rich robotic manipulation using **tactile and visual sensing**.
- Implemented an **end-to-end video augmentation pipeline** for multimodal dataset generation and policy evaluation.
- Exploring **scalable architectures** that unify perception, dynamics modeling, and control for **embodied intelligence**.

Apple

July 2021 – December 2023

Software Engineer

Hyderabad, India

- Developed a **ML based image compression system** that improved image quality by **95%** over the legacy codec reducing latency across **iOS Messaging**. Leveraged **GPU acceleration** for scalable inference.
- Developed and maintained **SMS classification and sub-classification NLP models** ($F1 \approx 0.99$, across 4 iOS releases, featured at **WWDC 2022**) reducing inbox clutter by **35%** for **40M+ users**.
- Optimized data transfer pipelines for **Move to iOS**, boosting median transfer speeds by **20%** and cutting failure rates via redesigned **batching and retry algorithms**.
- Automated **UI and functional testing** in **Python**, reducing QA time by **30%** and accelerating release cycles.
- Identified and triaged **100+ cross-team issues** during iOS beta phases, improving feature reliability and overall performance stability.
- Mentored** SWE Intern on model and iOS development, resulting in a successful **full time conversion offer**.

Apple

July 2020 – December 2020

Software Engineer Intern (Converted to Full-Time)

Hyderabad, India

- Developed an **iOS application** to optimize ML data-processing workflows, reducing feedback-loop latency by **60%**.
- Automated large-scale **data preparation tasks** (CSV manipulation, translation, cleaning) in Python, cutting manual effort by **70%**.

ACADEMIC PROJECTS

Task-Oriented Dialogue Pipeline for Robotics Support | *LangChain, GPT-4, FAISS, RAG, FastAPI*

- Built a **retrieval-augmented dialogue system** using LangChain and GPT-4 to assist robotics researchers with contextual troubleshooting.
- Deployed via **FastAPI** with FAISS-based semantic search, achieving **>90%** factual accuracy on curated robotics queries.

Real-Time Fatigue Detection System | *MediaPipe, OpenCV, PyTorch*

- Developed a **real-time fatigue detection pipeline** using MediaPipe Pose and FaceMesh for behavioral monitoring via webcam.
- Implemented heuristics on blink rate and posture stability to flag fatigue events with minimal false positives.

Causal Impact of Weather on Food Delivery Times | *Python, Causal Inference, Statistical Modeling*

- Applied **causal inference modeling** using DAGs to quantify weather's direct and mediated impact on delivery times.
- Validated results via cross-validation and found **storm conditions significantly increased delay**, visualized with DAGs and scatter plots.

TECHNICAL SKILLS

Languages: Python, C++, Swift, Objective-C, SQL, JavaScript

Frameworks: FastAPI, Flask, React, PyTorch, TensorFlow, LangChain

Systems & Tools: Linux, AWS, Docker, GitHub Actions, Spark, CI/CD

LEADERSHIP & ACHIEVEMENTS

- Mentor, Womentorship Program, NYU:** Guiding and supporting women in tech.
- Google Summer of Code 2020 Mentor, AnitaB.org:** Mentored contributors on the "Open Source Programs" project, leading design and code reviews in Django and React.js.
- Finalist:** Hack Dibner Hackathon (2024); **Winner:** Inter NIT Basketball & Poincare Math Competition