

Advait Patel

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EDUCATION

University of Illinois - Urbana-Champaign

Champaign, IL

BS in Computer Science – GPA: 3.9/4.0

Aug. 2022 – May 2026

Relevant Coursework: Real-time Systems, Machine Learning, Deep Learning for Robotics (Grad), Algorithms, Probability/Stats, Data Structures, Systems Programming, Computer Graphics, Linear Algebra

SKILLS

Python, PyTorch, C, C++, Amazon Web Services (AWS), Kotlin, OpenCV, PHP, SQL, JavaScript, Typescript, Git/GitHub, Flask, React, PyTorch, Java, Keras, Pandas, NumPy, Matplotlib, Docker, Linux/Ubuntu, ROS

EXPERIENCE

Capital One

June 2024 - Present

Software Engineering Intern

McLean, VA

- Created a divisional-level dashboard to monitor problems with teams' AWS usage using Typescript, React, and AWS.
- Decreased loading time on application page by 10x by optimizing GraphQL queries.
- Wrote extensive unit tests with 90+% test coverage using React Testing Library.

UIUC Coordinated Science Laboratory

April 2023 – August 2023

Research Intern

Champaign, IL

- Calculated camera intrinsics/extrinsics and collected demonstration data for imitation learning using COLMAP.
- Surveyed and analyzed state-of-the-art research papers in robotics and computer vision.

Yield Protocol

May 2023 – August 2023

Software Engineer Intern

Remote

- Developed a Web3 chatbot using open-source large language models and Python LangChain API integrations, resulting in 20% cost reduction compared to OpenAI APIs.
- Finetuned SOTA large language models on enterprise-grade hardware with AWS Sagemaker and Huggingface APIs.
- Created a custom question-answer pipeline dataset for model finetuning, resulting in over 4,000 unique data points, which enhanced model finetuning and increased response accuracy by 35%.

Trimble

June 2021 – August 2021

Software Engineer Intern

Remote

- Developed web and mobile applications in C# to enable compliance with federal transportation regulations.
- Ensured consistent code quality by using Git and following CI/CD practices, while using Agile methodologies.

LEADERSHIP/EXTRACURRICULARS

SIGRobotics (ACM @ UIUC) | *Founder, Chair* | *Python, ROS 2, PyTorch, MuJoCo*

April 2024 – Present

- Trained an imitation learning policy using PyTorch, LeRobot, and the Alex Koch arm.
- Developed a lesson plan and taught robotics concepts, including kinematics, motion planning, and simulations.

UIUC Gies Disruption Lab | *Technical Lead* | *Python, Huggingface, AWS*

January 2023 – December 2023

- Led a team of 6 software engineers to develop an AI tutor specific to UIUC courses using finetuned open-source LLMs, vector databases, and LangChain API integrations.

Teaching Assistant

August 2023 – Present

- Graded and mentored student projects for CS 222 Software Design Lab and CS 361 Probability/Stats.

PROJECTS

GPT At Home | *Express.js, Node.js, React, Typescript, OpenAI API, Claude API, Ollama*

- Built a custom ChatGPT clone that allows users to chat with any proprietary or open-source LLM.

Vision-Language Model Guided Affordances for Robotics | *Python, Huggingface, OpenAI API*

- Developed a language-conditioned affordance pipeline using robotic affordance models, GPT-4, and GroundingDINO.

Systems Projects in C | *C*

- Wrote a Unix shell from scratch, making use of fork-exec-wait paradigm.
- Implemented a text-based networking protocol in C for file-sharing, using non-blocking I/O.
- Wrote a multithreaded “make” from scratch using synchronization primitives and dependency cycle detection.