Neeraj Savdekar

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Education

University of California, Irvine Sept 2021 – Mar 2025

Bachelor of Science in Computer Science and Engineering | GPA: 3.9/4.0
Relevant Courses: Machine Learning and Data-Mining, Artificial Intelligence, Organization of Digital Computers, Embedded Software, and DSA

Skills

Languages: Python, Java, C++, C#, JavaScript, SQL, HTML/CSS, Verilog
Tools: Azure, GitHub, Azure DevOps, React.js, PyTorch, Flask

Experience

Instillux | *Redmond, WA* Feb 2024 – Sept 2024

Project Work (Feb-June) & Software Engineering Intern (July-Sept)

- Constructed 7+ scalable synthetic document datasets to generate input for machine learning models, reducing time to add new tests.
- Designed and implemented a secure user authentication and authorization system for a web application using Azure Functions, SQL server, and React.js.
- Encrypted passwords to ensure data safety and integrated JWT tokens for secure session management.
- Integrated third-party login functionality with Google and Microsoft accounts for seamless user experience.
- Built a web crawler and scraper using Scrapy and BeautifulSoup to extract accurate data from websites.
- Adapted to new technologies quickly, demonstrating a proven ability to learn and apply skills in a fast-paced environment.

UC Irvine | *Irvine, CA* Sept 2022 – Dec 2022

Course Assistant for Boolean Algebra and Logic

- Assisted over 400 students in class discussions, addressing questions and clarifying concepts related to Boolean algebra, proofs, and finite automata, leading to more class engagement.
- Conducted weekly office hours to offer personalized guidance, resolving individual student challenges.
- Collaborated with the course instructor and 18 fellow assistants to ensure effective teaching.

Projects

Image Segmentation for Drones Sept 2024 – Mar 2025

- Developed an image segmentation model using U-Net architecture with a ResNet34 encoder for unmanned aerial vehicle (UAV) applications.
- Implemented transfer learning using PyTorch, achieving a mean IOU of 0.931 and a mean accuracy of 99.7%.
- Optimized the model for real-time object detection and classification of aerial images at 5 images per second.
- Enhanced model performance by introducing data augmentation, weighted cross-entropy loss, and learning rate optimization to reduce false positives and improve accuracy, resulting in a 25% increase in per-class accuracy.
- Collaborated in a team of 4 to conduct research and train 10 versions of the model, documenting improvements.

Endless Runner Game June 2024

- Engineered an interactive endless running game using an ATmega32 microcontroller running at 8 MHz, incorporating an LCD, and joystick and keypad for user input.
- Configured crystal oscillator and employed assembly code to increase responsiveness.
- Optimized hardware interface with digital signal processing (DSP) techniques for keypress detection.

Movie Recommender July 2023

- Designed a personalized movie recommendation web application using Python and Flask for Netflix users.
- Processed 100M+ ratings from 480K users and utilized the Pearson correlation coefficient to interpret user review patterns and enhance recommendation accuracy.