Neelansh Khare

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EDUCATION

University of California - Irvine   Irvine, CA
Bachelor of Science in Computer Science

Relevant Coursework: Machine Learning & AI, Data Structures and Algorithms, System Design, Data Management, Computer Vision, Software Engineering, Software Testing and QA, Compilers & Operating Systems
Skills: Python, Java, JavaScript, React, SQL, C++, C, R, Git, Gradle, Maven, ROS2, OpenCV, Node.js, AWS, TensorFlow, MongoDB, Kotlin, Figma
Leadership: Software Developer for ICSSC, President for the Indian Subcontinetal Club, Google Developer Student Club, Volunteer for ENGin, Software Developer for Legacy Robotics, Data/Analytics Chair for Sigma Pi

EXPERIENCE

Software Engineer   June 2022 – Present
University of California, Irvine   *Irvine, CA*

- Developed and deployed a **Java** automation system for effort reporting, reducing processing time by **90%** and eliminating manual data entry errors.
- Architected a documentation generator using **Java and RESTful APIs**, helping with quicker onboarding.
- Implemented and tested complex **backend** features for a financial aid portal using **Java and JUnit**, resulting in a variety of new features.
- Resolved **frontend** visual bugs and improved UI/UX interactions using **React**, elevating the user experience.
- Designed and implemented a database anonymization application using **Java and SQL**, to ensure FERPA compliance.
- Engineered **JavaScript** data processing scripts that created **SQL** queries automatically from an Excel sheet, saving hours for developers weekly.

Undergraduate Researcher   January 2024 – Present
He Lab, University of California, Irvine   *Irvine, CA*

- Leading research on nano-particle trajectory prediction using computer vision and deep learning, resulting in a pending publication.
- Engineered and optimized a Python based CNN for electron microscopy analysis, achieving 95% accuracy in particle identification as well as developed my own scripts for data inference and preprocessing.
- Created a synthetic data generation pipeline that can produce 10000+ realistic microscopy images, enabling robust model training and validation.

PROJECTS

AI Based Stock Trading | *Python, REST APIs*
- Engineered an automated trading system utilizing Bard AI for market analysis and Schwab APIs for execution.
- Implemented risk management algorithms with stop-loss mechanisms.
- Developed real-time market monitoring system processing data from an exchange with sub-second latency.

Object Recognition Script | *Python, Matplotlib, OpenCV*
- Developed a real-time object detection system with 97% accuracy for household items using custom-trained CNN models.
- Built a user-friendly GUI for real-time visualization and result logging using Matplotlib.

Python Based Discord Bots | *Python, REST APIs*
- Handled 100+ daily interactions across multiple Discord servers.
- Implemented competitive gaming features with PostgreSQL leaderboard system, driving 70% increase in user engagement.
- Created automated moderation tools using natural language processing to maintain community guidelines.
- Designed asynchronous event handling system for optimal performance during high-traffic periods.

Compiler and Interpreter | *Python*
- Built a fully-functional compiler/interpreter from scratch in Python that processed the low level language Tiny.
- Implemented a lexer, parser, and the ability to add user defined functions and variables.