Nirvek Pandey

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Education

University of California San Diego — La Jolla, CA 92092
Regents Scholar, Computer Science B.S. — September 2022 - June 2026

Relevant Coursework: Object Oriented Design, Advanced Data Structures, Discrete Mathematics, Design and Analysis of Algorithms, AI: Search & Reasoning, AI: Probabilistic Models, Software Engineering, Reccomender Systems & Web Mining, Natural Language Processing, Parallel Computing, Operating System Principles

Skills

Programming Languages: Python, Java, JavaScript/TypeScript, C++, C#, R, SQL, HTML, CSS
Libraries & Frameworks: NumPy, Pandas, Matplotlib, Seaborn, OpenCV, Scikit-Learn, PyTorch, TensorFlow, TSFresh, Pygame, Angular, React, Express.js, Node.js, JUnit, Jest, Puppeteer, OpenCL, CUDA, Keras
Tools & Technologies: Linux, UMIX, Git, Docker, Firebase, MySQL, PostgreSQL, MongoDB, Figma, Miro

Relevant Experience

Neurolens — Costa Mesa, CA 92626
Data Science Intern — June 2024 - September 2024

- Designed **ETL system** architecture to optimize data flow from **databases** to **end-user data products**, streamlining integration and increasing pipeline consistency by **27%** for the R&D team.
- Leveraged **OpenCV** and **PyTorch** to process eye-tracking and time-series data, achieving **84%** accuracy in identifying suppressed measurements, enhancing explainability and advancing data collection for optometrists.
- Developed compelling visualizations using **matplotlib** and **Seaborn** to articulate the significance of architectural updates to stakeholders, driving informed decision-making and cross-functional alignment.

Students Who Engage, Lead, and Learn — La Jolla, CA 92092
SWELL Guide, Student Leader — July 2023 - June 2024

- Formulated and executed an automated record-keeping system using **REST API** and Python, reducing manual data entry time for CSE staff by **40%** and enhancing data accuracy.
- Led mentorship sessions for **75+** students, providing guidance on academic engagement, mental well-being, and career development, resulting in a **22%** increase in program participation.

Research

LLM Jailbreak *Python, PyTorch, Prompt Engineering* — January 2025 - Present

Conducting a multi-phase research project to enhance RedAgent, a multi-agent LLM "jailbreak" prompt generator, by systematically exploring novel architectures, improving data sources, and refining security measures; currently formulating a research paper, with potential publication showcasing high-impact advancements in AI safety.

Work

The Ida and Cecil Green Faculty Club at UCSD — La Jolla, CA 92092
Student Lead, Server, Host — October 2023 - Present

- Facilitate seamless guest experiences for events with **30–250** attendees by delivering prompt, personalized service and proactively addressing individual needs.
- Coordinate and optimize catering inventory across the stockroom, kitchen, and multiple event floors, ensuring timely availability of supplies and preventing stock shortfalls.

Projects

Development Journal *JavaScript, Git, Node.js, Jest, Puppeteer* — April 2024 - June 2024
Collaborated with an **Agile Scrum** team of 8, engaging in **pair programming** with backend developers while contributing to **daily stand-ups and retrospectives** to enhance code quality, knowledge sharing, and team alignment. Independently designed, optimized, and maintained the **CI/CD pipeline** using **GitHub Actions**, reducing deployment errors by **24%** and accelerating release cycles. Developed strong **teamwork, adaptability, and leadership** skills by balancing individual responsibilities with collaborative development efforts.

Blackjack Optimizer *Python, Pygame, NumPy, Pandas* — May 2024
Designed and implemented an search algorithm for Blackjack 21, applying reinforcement learning using **Markov Decision Process**, **Q-learning**, and gradient descent; successfully winning over **45%** of matches.

Sudoku Solver *GPyTorch, SciPy, NumPy, Pandas* — April 2024
Engineered efficient **constraint solving** algorithm using a **backtracking** approach to determine the completed state of a provided Sudoku Board; consistently filling standard Sudoku boards in under one second.