NIHAR MARAR

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Education

University of California, Irvine - Master of Computer Science   Dec 2026

University of California, Merced - Bachelor of Science Computer Science and Engineering   May 2025
Yonsei University, Seoul, South Korea - UCEAP Study Abroad, Computer Science   *Fall 2023*
- **Relevant Coursework:** Data Structures, Algorithm Design and Analysis, Database Systems, Machine Learning, Operating Systems, Full Stack Web Development, Advanced Linear Analysis, Statistics and Probability, UI/UX, Computer Networks, HCI
- **Extracurriculars:** UCM Dhamaka, UCM Boxing, Treasurer of UCM MAP(Minorities and Philosophy)

Skills

- Python, Java, Javascript, R, SQL, C, C++, Unity/C#, Gradio, NumPy, OpenGL, Pandas, React, Node.js, Tailwind CSS, HTML/CSS
- AWS (Sagemaker, S3), MATLAB, Microsoft Excel, MIPS Assembly, Godot/GDScript, Supabase, Shippo, HuggingFace, Docker, JDE

Experience

Machine Learning Engineer Intern, *X10e*   Jan 2025 - May 2025
- Developed a machine learning framework for traumatic brain injury analysis by building data pipelines that ingested 50k+ multimodal medical records into AWS SageMaker, optimize preprocessing time by 40% and trained our model to ~55% accuracy
- Administered and benchmarked advanced ensemble models (XGBoost, CatBoost, LightGBM), improving predictive accuracy on neurological recovery outcomes by ~18% over baseline linear models, while providing decent interpretable SHAP value insights
- Containerized the end-to-end workflow with Docker from Gradio and automated retraining on updated datasets, with an additional web scraping feature, cutting manual maintenance by 70% and positioning the framework for future deployment
- Managed a team of 5 researchers as Scrum Master to validate model performance, and accelerate experiment cycles by ~30%

Software Engineer, *Avitam Consulting Inc*   Jan 2024 - Dec 2024
- Designed and implemented backend integration pipelines using JDE, ERP, and Python that automated payroll and HR data synchronization for 20+ startup clients across healthcare, agriculture, and tech, ensuring 99%+ data accuracy
- Developed and deployed RESTful APIs in Flask to interface with JDE tables and PostgreSQL databases, cutting batch processing times from minutes to under 200ms per request and enabling clients to handle thousands of employee records in real time
- Engineered automated workflows in JDE (payroll, HR, and finance modules) to import new employee records, validate schema consistency, and export payroll metrics, reducing manual data entry by 80% and saving analysts an average of 10 hours per week
- Led and partnered with cross-functional product and engineering teams to prototype and ship MVP features such as real-time reporting dashboards and automated compliance alerts, improving operational visibility and adoption among 3 startups

Computer Vision Researcher, *UC Merced - Professor Wan Du* - Research Paper - *Eye Gaze Tracking*   Feb 2023 - May 2023
- Prototyped a cost-effective eye-tracking software solution that reduced hardware costs by ~70% compared to commercial systems
- Automated a MATLAB-based PDF tracking tool, achieving >95% accuracy in capturing user reading patterns during experiments
- Implemented data analysis tools to extract cursor positions, dwell times, highlights, etc, processing 1k+ reading events per session

Code Instructor, *Code Ninjas*   Jun 2022 - Present
- Instructed 50+ students (ages 5-17) in Data Structures, Algorithms, and languages including Python, C++, and JavaScript and mentored advanced students to solve LeetCode Hard problems; 3 progressed to competitive programming contests

Projects

NEXUS - Full-Stack E-Commerce Platform - *NEXUS*   Summer 2025
- Architected a cyberpunk-themed full-stack marketplace with Next.js, React, Supabase, and Stripe, supporting authentication, product catalog, and real-time checkout workflows used by 50+ test users during pilot launch
- Automated dropshipping workflows with Node.js microservices and Puppeteer web scraping using Aliexpress, cutting product sourcing/sync time from hours to minutes while maintaining 95%+ inventory accuracy

Atomic Archipelago - OS Concurrency and Scheduling Puzzle - ⬯   Spring 2025
- Programmed custom synchronization primitives (locks, semaphores, and condition variables) in Java (Nachos), ensuring deadlock-free scheduling and cutting busy-wait CPU usage by 30%, which helped pass thousands of concurrent stress tests
- Extended kernel with timed sleeps and inter-thread messaging, supporting 1K+ concurrent threads with <2% failure rate

HealthSync - Hospital Management Database App - ⬯   Fall 2024
- Designed relational schema and UI workflows simulating patient, doctor, and admin operations, supporting secure record management and billing across 5+ functional modules using SQL(Sqlite/PostgreSQL), and Python(Flask)
- Optimized SQL queries and reporting pipelines, reducing query runtimes by 60% and improving system efficiency overall