

Nithyasri Palanisamy

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EDUCATION

California Polytechnic State University

Bachelor of Science in Computer Science, President's Honors List 2024-2025

San Luis Obispo, CA

Sep. 2024 – June 2027

EXPERIENCE

Undergraduate Research Assistant - SURP

California Polytechnic State University

May 2025 – August 2025

San Luis Obispo, CA

- Developed a Unity-based AR application using YOLOv8 ONNX models to visualize rip current detections in real time
- Implemented ML detection models with 91% average precision to identify hazardous water zones linked to 100+ U.S. drownings annually
- Palanisamy, N., and Khan, F. H. (2025). “Augmented Reality Application for Real-Time Coastal Data Visualization.” Extended abstract submitted to the Southern California AI and Robotics Symposium (SoCal AI and Robotics Symposium) 2025, currently under review.

Software Engineer Intern - Livin

California Polytechnic State University

June 2025 – Present

San Luis Obispo, CA

- Built a multi-agent roommate and housing matching system using Google ADK, used by 500+ users
- Designed structured memory tools and a RAG-style pipeline with Gemini LLMs and vector search for context-aware profile matching
- Deployed agents to the cloud with Agent Engine, enabling scalable, production-ready execution

Research Student - UCSF AI4ALL

University of California, San Francisco

June 2023 – July 2023

San Francisco, CA

- Analyzed vaginal microbiome data from 160+ pregnancy cases to identify patterns linked to miscarriage risk, engineering a data processing workflow using NumPy and pandas
- Built supervised learning and neural network models with scikit-learn to predict outcomes from bacterial profiles, achieving 0.85 AUC for strong predictive performance
- Presented findings to 100+ health researchers, contributing to an ongoing discussion in early miscarriage detection

PROJECTS

Tixor | Python, React, Node.js, Supabase

June 2025 – Present

- Developed a smart ticket advisor that analyzes real-time price and inventory data to guide buy/sell timing for concert tickets
- Built an analytics engine and time series database to produce data-driven pricing insights
- Implemented data collection and analysis agents for scraping, trend detection, and automated decision-making

PowerPlay | Python, React, LangGraph

June 2025

- Developed an AI-driven trading system during the MARA Hackathon that arbitrages energy and inference marketplace prices to optimize compute allocation
- Built a Bitcoin price prediction model to guide real-time energy storage and workload distribution decisions
- Compared profitability across Bitcoin mining, AI inference, and grid resale to maximize resource utilization
- Designed a decision workflow to dynamically route compute toward the most profitable and sustainable option

VR-UR Robot | Java, C#

September 2024 – May 2025

- Developed a Java application to convert Meta Quest 3 hand inputs into control commands for a UR robot using screen-to-world mapping
- Designed mathematical algorithms to convert 2D user input data into 3D positional commands, optimizing robot motion through interpolation and velocity alignment

TECHNICAL SKILLS

Languages: Java, Python, C, C#, SQL, HTML/CSS

Frameworks: Node.js, React, LangGraph, Agent Dev Kit, Next.js, Tailwind CSS

Developer Tools: Git, AWS, Google Cloud, Unity, Supabase, Cursor, Ultralytics HUB

Libraries: NumPy, pandas, Matplotlib, Scikit-learn, PyTorch, TensorFlow