

NITHYASRI PALANISAMY

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EDUCATION

California Polytechnic State University, San Luis Obispo, CA

Junior Standing | Expected Graduation 2028

BS in Computer Science

Relevant Coursework: Software Engineering I & II, Systems Programming, Discrete Structures, Introduction to Computer Organization, Project-Based Object-Oriented Programming and Design, Data Structures, Linear Analysis I

Awards: President's Honors List, Dean's List 3x

2024-2025

RESEARCH / WORK EXPERIENCE

SURP | College of Engineering, *Undergraduate Researcher*, San Luis Obispo, CA

May 2025 – Present

- 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
- Co-authored a paper submitted to the ICCV RIWM 2025 Workshop

DormMe, *Software Engineer Intern*, Startup

June 2025 – Present

- Built a multi-agent roommate and housing matching system using Google ADK, used by 500+ users at Cal Poly SLO
- 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

Engineering Student Council, *Director of Events*, San Luis Obispo, CA

May 2025 – Present

- Planning student-focused events for 2025-26 by coordinating with leadership to align with ESC goals
- Leading logistics, budgeting, and promotion strategy for upcoming engineering events

California Polytechnic State University, *VR-UR Student Developer*, San Luis Obispo, CA

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

UCSF AI4ALL, *Research Intern*, San Francisco, CA

June 2023 – July 2023

- 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

California State University – East Bay, *Bioinformatics Research Intern*, Hayward, CA

June 2022 – July 2022

- Assembled and polished the sweet potato chloroplast genome from 64,500 short and long read sequencing data using Flye, ABySS, and Pilon
- Improved genome quality by 2.5%, generating high-resolution genome data with a 135K N50 and 0.00% gap rate, validated via QUAST and visualized in Bandage
- Presented annotated genome findings at the California Native Plant Society (CNPS) conference

TECHNICAL SKILLS

Languages & Frameworks: Python, Java, C, C#, Node.js, React, Next.js, Tailwind CSS, Scikit-learn, Pandas, NumPy, TensorFlow, PyTorch, SQL

Tools & Platforms: GitHub, Cursor, AWS, GCP, Unity, Agent Development Kit, LangGraph, Supabase, Ultralytics HUB