

TARUN YADGIRKAR

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EDUCATION

University of California, Berkeley

Bachelor's in Applied Mathematics

Berkeley, CA

Aug. 2026 – May 2030

Dougherty Valley High School

High School Diploma

San Ramon, CA

Aug. 2022 – Jun. 2026

- 11 AP courses (5s in Calculus AB, Calculus BC, Computer Science A, Physics C); concurrent college enrollment in Calculus III, Differential Equations, and Python Programming

EXPERIENCE

Research Assistant

Jul. 2025 – Present

Santa Clara University, Wireless Intelligent Networks (WIN) Lab

Santa Clara, CA

- Researching FPGA-based acceleration for machine learning and wireless communication algorithms under Prof. Krishna Ramamoorthy, Director of the WIN Lab
- Training and quantizing models in PyTorch and TensorFlow, then porting them to fixed-point FPGA implementations for high-throughput, low-latency inference
- Prototyping and optimizing fixed-point implementations of signal processing and channel estimation algorithms in Python
- Benchmarking inference latency and throughput against real hardware constraints to determine what an algorithm can achieve on embedded targets

Robotics Hardware and Embedded Systems Intern

Jun. 2025 – Aug. 2025

Rainier Labs

Sunnyvale, CA

- Researched, selected, and integrated display hardware for an expressive robotic head system, redesigning CAD models to ensure correct mechanical fit
- Evaluated and sourced microphone and speaker components, weighing hardware and software trade-offs for the human-robot interaction stack
- Collaborated on the robotic head design, balancing visual expressiveness against hardware and packaging constraints
- Built an inventory management system that streamlined hardware organization and reduced procurement cost
- Learned NVIDIA Isaac Sim and applied it to simulate robotic systems, validating motion and control behavior in a virtual environment ahead of physical assembly
- Iterated on robot configurations in simulation to shorten the loop between design changes and hardware prototyping

PROJECTS AND PATENTS

CarePath | Next.js, React, TypeScript, Grok Voice, OpenAI API, Vercel

Jun. 2026

- Built a voice-first patient navigation app converting spoken symptoms into a recommended care destination with visible model reasoning and cost estimates
- Shipped five modes (Triage, Debrief, MedCard, Check-in, Timeline) with privacy-by-design local data handling at the Legion Health × Atlas AI Autonomous Healthcare Hackathon

Klarity VoiceNote | Next.js, TypeScript, Retell AI, Google Gemini, Neon Postgres, Vercel

May 2026

- Won the Klarity Health sponsor track at the Build Smth AI-Native Hackathon at UC Berkeley, judged by DeepMind, Google Labs, Amazon, and Y Combinator
- Designed an AI voice agent for patient intake that auto-generates SOAP notes and drives a provider dashboard with model-assigned urgency ranking

BALANCE, Assistive Mobility Robotics | Provisional Patent No. 63/743,085

Oct. 2023 – Present

- Co-developed a hybrid legged-and-wheeled mobility device offering continuous rather than binary assistance across flat ground, stairs, and uneven terrain; design published in the Youth Innovation Journal

TECHNICAL SKILLS

Languages: Python, C/C++, Java, TypeScript/JavaScript, Swift, MATLAB, SQL

AI/ML: PyTorch, TensorFlow, OpenCV, CNNs/LSTMs, quantization, LLM orchestration, voice agents, Anthropic API, Google Gemini, OpenAI API, Retell AI

Frameworks: React, Next.js, SwiftUI, Node.js, Tailwind CSS, Vite

Hardware & Tools: FPGA design, embedded systems, NVIDIA Isaac Sim, Raspberry Pi, CAD, LiDAR/NIR sensors, Git, Linux, Vercel, Postgres, Xcode

HONORS AND AWARDS

Competitions: USA Computing Olympiad (USACO) Gold Division; American Invitational Mathematics Examination (AIME) Qualifier, 96 on the 2025 AMC 12A; VEX Robotics World Championship qualifier; 2nd place, AI Collective Tri-Valley Hackathon

Programs & Service: UC Berkeley ROAR Academy, 100% scholarship, 8th in the Summer Series racing simulation; Eagle Scout; Presidential Volunteer Service Award, Gold