Cassandra Caluag

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EDUCATION

Temescal Canyon High School — Lake Elsinore, CA
High School Diploma, Titan Engineering and Technology Academy (Advanced Track) — Expected 2026

- GPA: 4.0 UW / 4.7 Weighted
- Relevant Coursework: AP Computer Science Principles, AP Physics 1, AP Statistics, Advanced CAD/CAM, AP English Language and Composition, AP World History, IB History HL 1, AP Computer Science A
- Academic Honors: Top 25 (x3), Projected Salutatorian, High Honor Roll (x6)
- Awards & Recognition: Science Department Student of the Year (2025), Engineering Student of the Year (2023), Social Science & English Student of the Year (2024, 2025), 2025 NCWIT Aspirations in Computing High School Award - California: Inland Empire, Academic Decathlon - TCHS' Top Scorer in Honors Category & Top Overall Scorer (2024 - Technology and Humanity), Haas CNC Milling Machine Certification, MasterCam 3-Axis Certification, OSHA Safety Credential Certification, Girls' Tennis Award

SKILLS

- Programming Languages: Python, Java, C++, JavaScript, HTML/CSS
- Applications: Google Workspace (Google Colab, Google Sheets, Google Docs), VSCode, Jupyter, Canva
- Operating Systems: Windows 10, macOS Sonoma 14.5
- Frameworks and Libraries: Flask, PyTorch, NumPy, Pandas, scikit-learn, Matplotlib
- Languages: English (Fluent), Tagalog (Proficient), Spanish (Conversational)

TECHNICAL PROJECTS

ML-Based Classification of Brain Tumors in MRI Scans — April 2024 - March 2025

- Programmed a deep learning model to classify MRI scans into meningioma, glioma, pituitary, or no tumor classes utilizing state-of-the-art transfer learning with EfficientNet-B2.
- Python (programming language used for coding model), PyTorch (deep learning framework used to build and train model), Google Colab (cloud-based GPU platform for faster model training; used NVIDIA A100 GPU), Kaggle (data acquisition), Pandas & Numpy (data manipulation and analysis)
- Detected and classified brain tumors from 6500+ MRI scans with a 98% accuracy and 0.98 F1-score.
- Achieved: Yale Science and Engineering Association Award: "Most Outstanding Exhibit" out of 500+ projects, 1st Place in Systems Software in 2025 Riverside County Science and Engineering Fair, California Science and Engineering Fair Qualifier - Computational Systems: Medical, 1st Place in Computational Biology in 2025 LEUSD Science and Engineering Fair

ChemiQuest - AP Computer Science Principles — March 2023 - May 2023

- Developed an interactive app to boost understanding of the periodic table with a randomized quiz, proficiency levels, and quick access to element details
- Designed dynamic UI and personalized feedback using custom datasets for an engaging user experience
- Achieved: 5 on AP Computer Science Principles - National Exam (only 11% of 164,505 received this score)

Vitality - Boost Hacks II | "Best AI Hacks" — July 2024

- Independently developed a full-stack application as a solo participant in an international hackathon
- Engineered a comprehensive health and wellness app for first-gen, low-income students using Code.org App Lab (JavaScript, HTML, CSS) with stored data in Code.org Database for user accounts and journaling
- Developed FitBot, an AI-powered health chatbot, using Python + Flask (backend), HTML/CSS (frontend), and OpenAI API (GPT-4o mini model), deployed via Vercel
- Integrated cross-platform redirects to connect app components due to platform restrictions
- Presented to professionals from Google, Amazon, Microsoft, Tesla, Meta, and Palantir; competed against 1,000+ participants and awarded "Best AI Hacks" (top 1% of 1,000+ participants)
- Overcame challenges in API integration, Flask, and deployment, receiving 50+ positive user feedback for motivational and personalized support features

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EXPERIENCE

Aspire United Education   Lagos State, Nigeria, Africa | Remote
Volunteer Mentor   September 2024 - June 2025
Mentored kids at Heritage Orphanage in Lagos, teaching basic computer science and coding to help increase technical literacy.
- Taught foundational computer science and coding to underrepresented youth at Heritage Orphanage in Lagos through Zoom on a 3:1 student to mentor ratio; mentored 10 students total, with 85+ hours.
- Leveraged online platforms (Code.org, W3Schools, Programiz, Scratch) to introduce block coding and HTML/CSS fundamentals
- Designed and guided hands-on projects, like interactive games and portfolio websites, to encourage creativity and self-expression through code
- Assessed student progress through project completion, coding challenges, and one-on-one check-ins to adapt lessons to individual learning needs (75% increase in engagement and grades)

The Knowledge House   Los Angeles, CA | Remote
Karim Kharbouch Coding Fellow | Internship   June 2025 - June 2026
- Strengthened UI/UX design expertise through a competitive capstone summer fellowship, completing 100+ hours of technical and professional training in front-end development using industry-standard technologies like HTML, CSS, JavaScript, and Bootstrap
- Designed and developed the brand identity for tech startup, *Harbor*, by creating brand kits and wireframes to establish a cohesive visual presence, fostering real-world tech experience

Haas Principal Engineer   Lake Elsinore, CA
Titan Engineering and Technology Academy @ Temescal Canyon High School   October 2024 - Present
- Personally selected by Engineering Director; 1 of 8 out of 256 to maintain $80,000+ in machinery and assist 60+ peers in CAD/CAM software (SolidWorks, Mastercam) & running CNC machinery
- Co-Founder & Co-President, TCHS Engineering Student Association: spearheaded initiatives + collaborations to support 200+ academy students with resources, events, and opportunities

EXTRACURRICULAR ACTIVITIES

California Scholarship Federation, Temescal Canyon High School
President   September 2023 - Present
- Lead a national chapter of 80+ academically high-achieving students, coordinating meetings, community service events, and membership drives (Alzheimer's Association, American Heart Association)
- Organized and oversee volunteer initiatives (Earl Warren Elementary School gardening, interclub events with National Honor Society and Asian Student Union, teaching technology use to elders) with 1000+ community service hours documented
- Managed communication between members, advisors, and our board to maintain chapter eligibility and engagement; expand accessibility and assistance with scholarships, summer programs, internships

Girls Who Code, Temescal Canyon High School
Co-Founder, President   September 2024 - Present
- Lead 15+ girls and gender-expansive youth in weekly workshops and mentorship sessions to empower underrepresented groups in STEM through coding, collaboration, and project-based learning
- Assisted members in developing websites, games, and apps through Code.org, Replit, and p5.js

Python Programming & Data Analytics Summer Program, University of California, Riverside
Research Workshop Fellow   June 2024 - June 2024
- Conducted data analysis under Dr. Laura Sales using Python, mirroring methodologies in extragalactic astrophysics research
- Simulated astronomical phenomena (Tully-Fisher relation in IllustrisTNG simulations, galaxy and star detection; 3D rendering of galaxies) using Matplotlib, NumPy, Pandas, SciPy, and Astropy