SUSMIT DAS

Builder + researcher + artist

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EDUCATION

Academy of the Canyons, Class of 2027

Dual enrollment, College of the Canyons: 11 college courses, grades 9–11

4.68 Weighted

CTE Medicine Pathway: machine learning, bioinformatics, biomechanics, advanced Python, machine & deep learning, robotics, body systems, CTE cybersecurity pathway completion, American Sign Language

DURABLE SKILLS

Problem framing from direct observation · systems thinking · research literacy · iteration and usability testing · teaching by questioning · translation of complexity · patience under long timelines · running parallel projects

HARD SKILLS

Python · R · SQL · Java · JavaScript · React · Node.js · HTML/CSS · Git · GitHub

Scikit-learn · Pandas · NumPy · Matplotlib · NLP · CNNs · transformers · classification · regression · feature engineering · preprocessing · model evaluation · EEG signal encoders

DNA extraction · PCR · gel electrophoresis · pipetting · sequence analysis · RNA-seq and gene expression

AAC design · visual supports · American Sign Language · literature review · technical writing · research reports · data visualization · accessible science education

Procreate · Canva · CapCut · Notion · Milanote · Slack · Microsoft 365 · Google Workspace

ASPIRATIONS

Physician-researcher in neurology. Keep working on giving language to people who have none and getting care to people who cannot reach it.

PROFILE

Aspiring physician and student researcher. I build assistive technology, health-access tools, and biomedical AI for patients who usually get designed around instead of designed for.

EXPERIENCE + CARE

Family Caregiver + Assistive-Technology Developer

Autism communication and learning support | Lifelong, ongoing

- Have supported a nonverbal family member with autism throughout his speech development, daily living, teaching, and activities built around AAC (augmentative and alternative communication), visual supports, and sign language.
- Observed what existing AAC tools assumed he could do, then built activities and an app (AlexSpeak, p. 2) around what he actually does.

Web Developer

Unisystech | internship

- Designed, built, and deployed websites for local businesses and the Chamber of Commerce, hosting and maintaining them on Linux; worked with clients directly and delivered sites they could keep running after handoff.

Volunteer Tutor

Schoolhouse | online

- Taught live Python programming sessions online and created the lesson plans for them.

Patient Support Volunteer

Henry Mayo Newhall Hospital | March 2026 – September 2026

- Supported patients with water, warm blankets, directions, and other nonclinical needs while collaborating with hospital staff.
- Built trust through conversation with patients experiencing chronic pain, paralysis, limited mobility, and extended hospitalization.

Sports Medicine Student + AT Assistant

West Ranch High School · Hart District Medical CCR Pathway | grade 12

- Shadow athletic trainers at games and practices; tape athletes' ankles, wrists, and legs and assist with injury care and prevention.

Tutor + Center Assistant

Kumon | paid position, 2025–present

- Teach mathematics and English by guided questioning and teach-back; review work, track progress, and adapt explanations to individual learners.
- Strengthen student confidence and independence by having learners explain their reasoning, identify errors, and solve problems without relying on answers.

Competitor

Science Olympiad | 4 years

- Competed in regional and state events across earth science, life science, chemistry, engineering, and laboratory science; earned 6 medals (5 regional, including 2 first place; 1 state).

Poet

Santa Clarita Sister Cities Young Artists & Authors Competition | three-time winner

- Took 1st place in the Santa Clarita Sister Cities poetry competition three times, including 2024 and 2025; the latest winning poem placed 2nd internationally at the Sister Cities Young Artists & Authors Showcase (2026), where I delivered a spoken reflection at the ceremony.

Unspoken: A Book About My Brother

Year-long SCP project | in progress

- Writing short chapters about growing up beside a nonverbal brother who talks without words.

CULTURE

- **Bollywood dance** since age 10: perform with a group at Durga Puja, Holi, and community events while learning new choreography and dance styles.
- **Interests:** visual art (pencil, acrylic, watercolor, alcohol markers), guitar, tennis, neuroscience, assistive technology.

SUSMIT DAS

INSPIRATIONS

Rabindranath Tagore · Stephen Hawking · Demis Hassabis · 3Blue1Brown · Carl Sagan · Srinivasa Ramanujan · Robin Williams · Hans Zimmer · Leonardo Da Vinci · Temple Grandin · Oliver Sacks · Mahatma Gandhi

SELECTED AWARDS

- Santa Clarita Sister Cities Poetry: three-time 1st place, most recently International 2nd Place (2026)
- Los Angeles County Science Fair recognition
- Research Rising Stars recognition (2024)
- Science Olympiad: 6 medals (5 regional, including 2 first place; 1 state) across earth science, life science, chemistry, and general science events

ORGANIZATIONS

- National Honor Society (3 years)
- Math and Physics · Imagining the Future · A.W.A.R.E.

PROGRAMS + COURSEWORK

- Harvard Computer Society AI Bootcamp
- Inspirit AI Scholars Program
- MIT: Data Science and Machine Learning: Making Data-Driven Decisions
- Stanford: Introduction to Healthcare
- IBM: Python for Data Science, AI & Development
- UC San Diego: Python and mathematics for machine learning; object-oriented programming in Java
- Meta: front-end development and React
- First Aid certified
- Honors coursework across English, math, chemistry, history, cybersecurity, and body systems; college courses in statistics, biology, psychology, communication, and ASL

SELECTED PROJECTS + RESEARCH

Independent Researcher

Neurolingo: EEG-to-text for people who cannot speak | ongoing

- Investigate methods for translating EEG brain signals into language for people with severe communication limitations.
- Explore EEG preprocessing, neural-signal encoders, multimodal projectors, and language models on public reading datasets such as ZuCo, while evaluating consumer-hardware limitations.

Developer + Designer

AlexSpeak: AAC app for nonverbal users | independent

- Noticed that existing AAC apps assumed menu navigation my brother couldn't do; designed an app around visual choices, simplified cause-and-effect taps, and caregiver controls.
- Revised the interface through direct observation and informal usability testing with its intended user.
- Also built a speech-encouragement app that runs on the device and adapts to one person's voice.

Healthcare Access

VERIFY Care: barrier-first navigation for affordable care | independent

- Reviewed why affordable care goes unused (cost, transportation, scheduling, language, distrust, inaccurate listings) and developed a navigation framework that starts from the barrier instead of the directory.
- Designed a proposed Santa Clarita pilot to verify listed resources and measure contact success, appointment access, service receipt, trust, and usability.

Student Researcher

NLP Drug Recommendation System | Los Angeles County Science Fair

- Analyzed 215,000+ UCI drug-review records to classify 11 health conditions from patient-written text using NLP preprocessing, sentiment analysis, and n-gram feature engineering.
- Compared Bag of Words, TF-IDF, Word2Vec, Naive Bayes, and Passive Aggressive models; reached 96.2% classification accuracy.

Independent Researcher + Developer

Lupus research | LupusInvariant in progress · flare prototype is non-diagnostic biomedical AI

- **LupusInvariant:** Most lupus models look strong on the dataset they were trained on and fail on a different hospital's patients. Testing whether rank-based gene-expression relationships from public NCBI GEO data hold up better across datasets.
- **Lupus Flare Prediction Prototype:** Modeled relationships among symptoms, sleep, stress, and weather with Python and Scikit-learn, using feature engineering, visualization, and classification metrics, to test whether flares can be anticipated.

App Developer

Mettle: lupus care app | 2026 Congressional App Challenge entry

- Designed and built Mettle for lupus care, with symptom, medication, and mood tracking, wearable-data integration, doctor reports, and peer support.

Developer

PathwayAdvise | EmpowerHacks hackathon

- Built a web application organizing academic, financial-aid, career, community, and mental-wellness resources for first-generation, low-income students.

AI Coursework Projects

Harvard Computer Society AI Bootcamp · Inspirit AI Scholars Program

- **Harvard:** Built a GPT-style mini-LLM on Tiny Shakespeare using character/word encoders, batching, multi-head self-attention, feed-forward blocks, and dynamic quantization; reduced ~3.5M parameters to 1.6M.
- Also implemented a Vision Transformer for MNIST with custom patching, attention, normalization, transformer blocks, and classification layers; completed a reinforcement-learning game capstone.
- **Inspirit AI:** Built computer-vision models for self-driving applications using image processing, CNNs, and YOLO to identify vehicles, pedestrians, traffic lights, and other street elements.

Program Participant

Prakses / Global Prep Academy | 2025–present

- Joined Global Leadership, Interpret, PromptCraft, Engineering, and Cognitive Science & Healthcare cohorts; examined global issues, healthcare, media framing, and overlooked perspectives through debate.
- Developed a human–AI interaction framework using AI as a scribe, critic, and research aide; explored prompt design, LLM integration, and human-in-the-loop evaluation while keeping independent judgment.
- Applied this learning to other projects as a framework for structured planning and iterative prototyping.

Athletics and Music

- Played tennis for 13+ years through training and some competitive play.
- Completed about four years of guitar instruction, learning different techniques, chords, and music fundamentals.