Nikhil Krishnaswamy

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Education

Stanford University class of 2030
Computer Science, Neuroscience

Cupertino High School Unweighted GPA: 4.00
16 APs; AI Club Founder

Experience

Computational Researcher Jun. 2023 – Present
Peter Tass Lab, Stanford University

- Collaborating with a Stanford postdoc using The Virtual Brain neural mass model to study stimulation parameters for seizure suppression, built a clinical interface; only high school presenter at IEEE Body Sensor Networks.
- Published a comparative analysis on EEG-based seizure detection and prediction, evaluating supervised learning approaches for forecasting performance.

Bioengineering Intern Jun. – Aug. 2025
Stanford Institutes of Medicinal Research, Stanford University

- Developed a biomedical device using the BioDesign process, translating unmet clinical needs into clear product requirements.
- Designed single-channel portable fNIRS device with custom PCB (78.88mm × 43.26mm) integrating photodiodes and infrared LEDs (740/850nm) on a flexible board to measure oxyhemoglobin and deoxyhemoglobin changes.
- Optimized to meet 100g weight and $50 cost constraints; learned iterative prototyping of soldering, stress testing, and clinical wear trials.

Research Collaborator Mar. 2024 – Present
Spezi Lab, Stanford University

- Building the OpenTSLM iOS app using Stanford's Spezi framework, integrating time-series language models for clinical reasoning over multivariate medical data.
- Developed Spezi modules [HealthKit, Charts, and Epilog] enabling real-time health data collection, visualization, and seizure event logging.

Founder & Product Lead Aug. 2024 – Jun. 2025
Neuropod Technologies *Cupertino, CA*

- Invented and patented portable behind-the-ear EEG device integrating custom PCB with gain/amplification stages, filtering circuits, and ESP32 Bluetooth module for wireless transmission; achieved $65 build cost with minimal noise interference.
- Designed multi-stage hardware prototypes iterating from Arduino/op-amp setup (V1) to analog-digital oscilloscope (V2) to final PCB with reinforcement learning-based adaptive filtering; 3D-printed TPU enclosure.
- Validated hardware through clinical wear, drop testing, and IP54 water ingress resistance; 30-minute pre-seizure prediction with 5ms BLE latency; comparable signal quality to clinical EEG at 2–4x lower cost.

Select Awards

Pete Conrad Scholar – Intl 2025 Conrad Challenge Power Pitch Award
Bryan Cameron Impact Scholar Finalist – 2.5% acceptance rate
Coca-Cola Scholar Semifinalist – 1.2% acceptance rate
Best Poster – IEEE MIT Undergraduate Research Technology Conference
1st Place – School Photographers of America Student Competition; won $2k Sony Camera
State Winner – Samsung Solve for Tomorrow; won $12k in Samsung tech for school
2nd Place – California Science and Engineering Fair, Computational Systems: Medical
1st Place – Synopsys Science & Engineering Fair, Biomedical Engineering