Sreyas Chava

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Education

Westlake High School: Graduation – May 2027

Advanced STEM Courses:

- AP Computer Science A
- AP Human Geography
- Invention & Innovation (Robotics)
- AP Precalculus
- AP Statistics
- Computer Science 2
- Robotics I
- AP Calculus AB
- AP English 3
- AP Physics 1&2
- Computer Science 3
- Robotics II
- Statistics 2 Beyond Statistics
- AP Business Personal Finance
- AP Calculus BC
- AP English 4
- AP Physics C
- Computer Science Independent Study
- Robotics III

Academic & Research Experience

Team Lead, Manufacturing Subteam, FIRST Robotics Competition Team 2468 Team Appreciate – Austin, TX

Aug 2023 – Present

- Manufacturing team lead for teams 2689, 2687 and 2468 (flagship Robotics team)
- Programmed CNC machines using CAM software to manufacture precision robot components from aluminum and other materials.
- Fabricated field elements from wood, plastic, and aluminum to support team practice and competition preparation.
- Developed and implemented a structured certification and training program for mills and lathes to qualify new student manufacturers on shop equipment.
- Trained 40+ students on different machines in three years of high school.
- Machined 300+ parts for all the competition robots produced by the Westlake Robotics program.
- Operating and programming Haas CNC milling and turning machines.
- Completing Haas CNC Mill and Lathe Certifications (In Progress).

Research Intern, Department of Civil Engineering, Indian Institute of Technology (IIT) Kharagpur
(Remote & On-Campus) Jan 2026 – Present

- Expanded an independently initiated flood-analysis project under faculty mentorship into a comprehensive hydrologic modeling study.
- Developed HEC-HMS watershed models using USGS, NOAA, and Texas hydrologic datasets.
- Performed watershed delineation, hydrologic calibration, and Probable Maximum Precipitation (PMP) / Probable Maximum Flood (PMF) analyses.
- Applied GIS, Python, and hydrologic modeling to evaluate watershed response and reservoir operation strategies for flash-flood risk reduction.
- Contributing to the preparation of a research manuscript on flood modeling and predictive flood-risk reduction.

High School Research Academy (HSRA), The University of Texas at Austin Summer 2026
Physics-Based Haptic Hardware/Software Platform for Atomistic Simulation

- Contributed to the development of a physics-based haptic platform integrating force-feedback with atomistic simulations.
- Developed C++ enhancements for simulation functionality, haptic-device integration, and force-feedback control.
- Built Python tools interfacing with the Atomic Simulation Environment (ASE) for atomic data processing and simulation configuration.
- Implemented user-configurable features, including atom count, interatomic potentials, interaction constraints, and force-feedback intensity.
- Validated the platform by improving agreement between simulated and expected atomic interactions.

Georgia Tech Financial Services Innovation Lab – Atlanta, GA Summer 2025

- Conducted three-month FinTech research (30 hrs/month) on market cap using Python (Pandas, Matplotlib, Plotly) and R.
- Performed regression and market cap analysis to evaluate product offerings and benchmark competitors.
- Built visualizations and delivered data-driven insights to support fintech research.

Self-Led Flood Data Analysis & Prediction – Austin, TX Summer 2025- Present
Independent Researcher

- Initiated a self-directed research project following the July 2025 Guadalupe River flood to investigate data-driven approaches for improving flood prediction and public safety.
- Retrieved and processed 25+ years (1999–2025) of USGS hydrologic data using JSON APIs and Python.
- Designed interactive visualizations to analyze long-term river discharge and precipitation patterns across multiple Guadalupe River monitoring stations.
- Investigated temporal trends and flood-event characteristics using publicly available hydrologic datasets.
- Independently proposed extending the work toward predictive flood analysis and research publication.

Duke University Summer Program – Durham, NC May 2023 – Aug 2023

- Used SolidWorks and Autodesk Tinkercad to CAD a possible Martian rover design with informed HCI principles.

Volunteering & Leadership Experience

UNICEF Club Founder at Westlake High School – Austin, TX Aug 2024 – Present

- Founded Westlake High School's UNICEF Club and established a partnership with UNICEF Costa Rica to support Fundación Lloverá, a shelter serving vulnerable migrant families, children, and homeless individuals.
- Aided on-the-ground UNICEF branches in Costa Rica, India, and Tanzania for children's rights.
- Raised $1,500 for UNICEF children's fund.

Chirag Foundation – Austin, TX Aug 2024 – Present

- Organized volunteer initiatives & raised $1,250 supporting humanitarian programs across the U.S., India, and Africa.
- Coordinated mass food and water distribution for flood-affected communities in Khammam, India.
- Distributed 200+ education kits for students in Tanzania Kijija Cha Furaha Orphanage.

Awards

- FRC Dripping Springs Districts 1st Place Winners (Team 2468) April 2026
- FRC Impact Award (Team 2468) April 2026
- FRC Belton Districts 1st Place Winners (Team 2468) March 2026
- FRC Industrial Design Award (Team 2468) March 2026
- 3x Westlake Robotics Manufacturing Award (Only person in westlake program to receive it three years in a row) Fall 2023 - Fall 2025
- FRC Texas State Championships Finalist (Team 2687) April 2025
- FRC Worlds Championship Qualifier (Team 2689) April 2024
- FRC State 2nd Place Finalist (Team 2689) April 2024
- National Latin Exam (Area F): Winner, Grammar February 2024

Skills

Manufacturing Machine Certifications: Mitre Saw Operation Certified, Lathe Operation Certified, CNC Operation Certified, CNC-Jig Operation Certified, Thunderlaser Operation Certified

Technical Skills: Solidworks CAD, Autodesk Fusion 360 for CAM, HEC-HMS, QGIS, WhiteboxTools

Programming Languages: Python (Pandas, Seaborn, Matplotlib, Plotly, Dython), R, Java, JavaScript, SQL