

Shrihan Nomula

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EDUCATION

University of California, Berkeley

B.A. Data Science (Emphasis in Robotics) & Astrophysics; **GPA: 3.9**

Berkeley, CA

Aug 2025 – May 2029

Relevant Coursework: Principles & Techniques of Data Science, Data Structures, Computational Structures in Data Science, Foundations of Data Science, Linear Algebra & Differential Equations, Physics for Scientists & Engineers

EXPERIENCE

Machine Learning Development Engineer

Jul 2026 – Present

Presonance

- Building a **brain-response platform** on a vendored **multimodal brain encoder** across **20,484 cortical vertices**
- Serving model inference on **cloud GPUs** behind a **FastAPI** backend, caching results so each video is processed once
- Scraping **Instagram** and **TikTok** reels labeled with **5** real engagement metrics to build the training set
- Training **regression models** on brain-activation features to predict views and engagement from video alone

AI Engineer Extern

Jul 2026 – Present

Externship — Pfizer

- Building an end-to-end pharma **document intelligence pipeline** in **Python** using **PyMuPDF**, **pdfplumber**, and regex heuristics
- Benchmarking **3 OCR engines** (**Tesseract**, **PaddleOCR**, **EasyOCR**) on scanned PDFs to select the optimal tool
- Engineering a **RAG pipeline** with **LlamaIndex** and open-source **LLMs** (**Mistral**, **Phi-2**), deployed as a **Gradio** chatbot

ML/AI Researcher

Apr 2024 – May 2025

Independent Research — Federated Learning | Advisor: Prof. Ron Mahabir

- Engineered a privacy-preserving **federated learning** model in **Python** and **TensorFlow** on **972 samples** across **10 clients**
- Designed custom **aggregation algorithms** that corrected client data imbalance across **25+** training iterations
- Boosted global model accuracy by **15%**, measurably strengthening the robustness of the decentralized learning system

Exoplanet Data Research Assistant

Apr 2024 – May 2026

NASA Jet Propulsion Laboratory

- Analyzed exoplanetary datasets across spectral type and effective temperature to evaluate planetary habitability conditions
- Constructed **H-R diagram** visualizations, uncovering patterns in exoplanet-hosting K- and M-type dwarf star systems
- Quantified correlations between stellar luminosity ranges and habitable-zone parameters to assess liquid-water viability

Data Science & Analytics Intern

Jun 2024 – Aug 2024

California EPA — Department of Toxic Substances Control

- Directed a team of interns through balance and pipette verification, analyzing **90+ data entries** across **5+** EPA-caliber labs
- Calibrated **50+** soil-sample pH readings and validated lab equipment safety against **EPA standards**
- Overhauled formatting across **750+ pages** of lab reports, ensuring procedural clarity and audit-ready accuracy

PROJECTS & LEADERSHIP

AI Rover Engineer — Head of Odometry | Space Technologies at Cal (STAC) · WHS Robotics

Sep 2019 – Present

- Engineered the AI Rover's **robotic arm** in **Fusion 360** and led **odometry** research to precisely track robot movement
- Prototyped **3+** lifting-mechanism subsystems and fabricated custom **3-D part designs** in **SolidWorks**

Bags n' Blankets — Co-Founder | Nonprofit

Aug 2023 – Present

- Co-founded a program converting chip bags into **insulated blankets** lined with hand warmers for extra heat retention
- Collected **\$20,000** in chip bags via donation bins and partnered with **Mercy House** to distribute **100+** blankets in Buena Park
- Applied for **501(c)(3)** status through **Hack+** fiscal sponsorship to formalize and scale the initiative

Data Research Committee | LA County Office of Education — AI Task Force

Dec 2023 – Jul 2024

- Synthesized **200+ survey entries** with cross-functional stakeholders to design **AI learning solutions** for TK-12 education
- Authored a newsletter establishing guidelines for ethical, effective **AI integration** for teachers and administrators

TECHNICAL SKILLS

Programming: Python, Java, SQL, R, TensorFlow

ML & AI: Multimodal Deep Learning, Federated Learning, RAG (LlamaIndex), LLMs (Mistral, Phi-2), Azure ML (regression, clustering, model evaluation)

Document AI & Data: OCR (Tesseract, PaddleOCR, EasyOCR), PyMuPDF, pdfplumber, Gradio, web scraping, geospatial analysis

Engineering Tools: SolidWorks, Fusion 360, CAD modeling

AWARDS & CERTIFICATIONS

- Valedictorian:** **4.0/4.0** unweighted GPA, Highest Honors, **#1-ranked high school in California** (2025)
- 3rd Place, Program Management Engineering:** LA Metro Capital Project, TCAP (2024)
- Alison Certification in Data Science & Analytics:** **Azure ML** and **R** for regression, clustering, and evaluation (2024)