

ARYAN SINGH

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EDUCATION

Johns Hopkins University | 2023-2027

B.S. Computer Science & Biomedical Engineering

Baltimore, MD

GPA: 4.0

- Minors: Entrepreneurship and Management, Applied Math and Statistics
- Relevant Coursework: Machine Learning, Deep Learning, Algorithms, Probability Theory, Linear Algebra, Optimization, Systems Programming, Quantum Computing.

PROFESSIONAL EXPERIENCE

NeuroVoice by Rice University

Founding AI Developer

Houston, TX

Mar 2024 – Aug 2025

- Cofounded and built a **production-grade multimodal ML platform** for neurological screening using speech and language models, trained on **3,000+ hours of clinical and public-health audio (12TB+)**.
- Designed and deployed **end-to-end ML infrastructure** spanning data ingestion, feature extraction, model training, evaluation, and batch inference, delivering **25–30% accuracy gains** over baseline cognitive screening tools.
- Deployed pilots with state health agencies across 8 US states; enabled scalable **deployment for 50,000+ screenings/year**.
- Raised **\$150K+ seed funding** by communicating model performance, uncertainty, and deployment constraints to clinicians and policymakers.

Texas Center For Superconductivity

Machine Learning Engineer

Houston, TX

Feb 2023 – Mar 2024

- Built **ML-driven data pipelines** for analyzing conductive polyaniline nanofibers in nerve and tissue regeneration research.
- Processed and modeled **120,000+ high-resolution experimental micrographs** using custom computer vision workflows, reducing material optimization cycles by **80%+** and compressing research iteration time from months to days.

Rice University

Computational Genomics & AI Researcher

Houston, TX

Sep 2021 – Dec 2022

- Developed **genome-scale ML systems** for CRISPR off-target prediction using experimental Geminin-tagged Cas9 (gCas9), enabling **ultra-high-specificity gene editing** for neurodegenerative disease research.
- Applied rigorous statistical modeling to **10+ TB of sequencing data**, cutting in-silico screening time from weeks to <6 hours.
- Work awarded Top Prize at Rice Neurotransmitter Research Competition Nationals.

RECENT PROJECTS

QuSim: Open-Source AI-Enhanced Quantum Circuit Simulator

- Built a **full-stack, modular quantum circuit simulator** with multiple execution backends (statevector, density-matrix, stabilizer, tensor-network), designed for correctness, extensibility, and high-performance experimentation.
- **Integrated AI/ML-driven analysis to model noise**, detect failure modes, and predict breakdowns in quantum circuits, paired with dynamic visualizations for diagnosing behavior under entanglement growth and hardware constraints.

Embodied AI: Belief-Inference Evaluation & Agent Reasoning Systems Research

- Built a **scalable ML evaluation framework** for embodied AI agent reasoning, running **2,400+ large-scale simulations** to stress-test model failure modes, decisions, and false-beliefs using Python workflows (NumPy, TensorFlow, pandas, joblib).

AWARDS

- USA Computing Olympiad (USACO) **Platinum Division** – Top 0.5% Nationally
- USA Physics Olympiad (USAPhO) **Gold Medal** – Top 50 Nationally

Mar 2025

Apr 2023

LEADERSHIP & PUBLIC SERVICE

City of Houston

Global Youth Ambassador

Houston, TX, USA

Jan 2022 – Jul 2025

- Advised the Mayor's Office, Houston City Council, and Texas legislative staff on youth mental health and STEM access initiatives impacting **multiple congressional districts**.
- Hosted 2-season podcast (100K+ views online) featuring the mayor, city officials, and educators for proactive change.
- Contributed to proposals influencing **\$7M+ in federal funding** for youth mental health & STEM mentorship programs.

SKILLS

Programming Languages: Python (PyTorch, TensorFlow, NumPy, Pandas), C++, MATLAB, JavaScript, Java, SQL, Bash

Full-stack Development: React, Angular, HTML, CSS, REST APIs, microservices, server-side development, API design

Machine Learning & Data: Deep learning, transformers and attention, multimodal models, computer vision, NLP, speech and audio modeling, model evaluation, Hugging Face, OpenCV

Systems & Infrastructure: Linux/Unix, Git, Docker, distributed data pipelines, parallel computing, relational databases, large-scale data processing