Aarush Agarwal

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EDUCATION

Carnegie Mellon University *Expected Graduation, May 2027*

Bachelor of Science in AI & CS, School of Computer Science

- QPA: 3.70, CMU School of Computer Science Dean's List High Honors

EXPERIENCES

Felicis | *Venture Fellow* *January 2026 - Present*

- Selected as a Venture Fellow in a highly competitive program focused on leveraging AI and technology for real-world impact; partnering with Felicis to identify, support, and accelerate early-stage student founders across campus.

Shopify | *Machine Learning Engineer Intern* *May 2025 - Aug 2025*

- Improved a buyer-fraud detection system with VertexAI, optimized BigQuery/Dataflow pipelines to increase predictive accuracy by 3%, and applied targeted feature selection to reduce training iteration time by 70%.
- **Authored a patent** for a novel AI framework where distributed, specialized agents use Neo4j graph traversal to collaboratively decompose and execute tasks, enhancing output quality.

Carnegie Mellon Physics Lab | *CUDA Research Assistant* *Aug 2024 - Oct 2025*

- Co-authored paper focused on a binning-based parallelized K-Nearest Neighbors algorithm, achieving up to a 200x speedup over FAISS (Facebook AI Similarity), Annoy (Spotify), and SCANN (Google) in low-dimensional spaces.
- Transitioned Python autograd and gradient functions to C++ and CUDA extension implementations and integrated with PyTorch JIT serialization, achieving a 10% decrease in KNN runtime.

PROJECTS

Haven | *Backend* *Oct 2025*

- **Awarded 1st Place in YC & Fetch.AI Tracks and Best Startup Award at CalHacks 12.0** for an intelligent patient care and hospital management system that coordinates agents for patient monitoring and clinical decision support.
- Architected a distributed system where Fetch.ai and Claude agents coordinate for clinical intelligence; developed a Facial Photoplethysmography (FPPG) pipeline (OpenCV, FastICA) for non-invasive heart rate monitoring and a real-time voice intake agent (LiveKit, Groq) to generate patient summaries.

Yumi | *Backend & ML* *Oct 2025*

- **Awarded 3rd Place (3/150+ teams) at HackHarvard 2025** for an agentic social network that learns food profiles to eliminate dining friction, whether eating alone or coordinating with friends.
- Built a FastAPI backend with taste profile extraction and intelligence learning from user interactions, natural language reviews, sentiment analysis, multi-user preference merging, spatial restaurant search using PostGIS, and Twilio voice integration for automated reservations.

Medicly | *ML Lead* *Sep 2025*

- **Awarded Grand Prize (1/200+ teams) at HackCMU 2025** for a platform that slashes physical therapy evaluation time from 14 days to 10 minutes. Sponsors include Anthropic, Citadel, Stripe, Jane Street, & HRT.
- Engineered a multimodal pipeline with pose estimation, structured kinematics, joint-angle prediction, 3D mesh rendering, and LLM-powered recovery reports.

SKILLS

Languages C++, Python, SQL, C, Java, JavaScript, Swift, Lua | **Familiar:** Ruby, R, Bash, SML

Software Tensorflow, PyTorch, CUDA, Vue.js, React, Firebase/Firestore, Git, DBT, GCP, Neo4j, PostgreSQL, Supabase, OpenCV, Pandas, AWS, FastICA, Groq, LiveKit, Fetch.ai, fPPG

AI Experience Reinforcement Learning, Machine Learning, GPU Acceleration, Computer Vision, Multi-Agent Systems, GNNs

AWARDS

USACO Gold, **Grand Prize at CMU Claude Builder Hackathon (Nov 2025)**