Aahan Bagga

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EDUCATION

University of California, Berkeley **May 2027**

B.S. in Computer Science, B.S. in Data Science (Early Admit) **3.5/4.0 GPA**

Coursework: Data Structures and Algorithms, Machine Learning, Agents & Generative AI, Database Systems, Structure and Interpretation of Computer Programs, Artificial Intelligence, Principles and Techniques of Data Science, Computer Security, Linear Algebra, Multivariable Calc

EXPERIENCE

Pronto Networks **May 2026 – Present**

Machine Learning Intern *Walnut Creek, CA*

- Built an HGNN anomaly detection pipeline (site models + org aggregator), raising recall from **40%** to **93%** and cutting FP **50%+**.
- Built a drive-thru voice-ordering system (Whisper, GLiNER, Qwen2.5-Coder-1.5B) on a Banana Pi CPU + Hailo NPU, cutting Whisper RAM from **800MB** to **60MB** and raising speech accuracy from **40%** to **80%** and intent accuracy from **30%** to **80%**.

IBM **January 2026 – May 2026**

Software Consultant ~ Contract *Berkeley, CA*

- Competed in IBM's AI Racing League, engineering an autonomous TORCS driver in Python using IBM Granite AI for real-time vehicle control and telemetry processing, cutting lap times from **60+** seconds to an optimized **28** seconds on the Corkscrew Circuit.
- Tuned telemetry streams and key parameters - Steer Gain, Target Speed, Braking Logic - to maximize circuit performance.
- Led a multidisciplinary team through IBM's Global Progression Funnel, coordinating strategy across a tiered competition structure.

HERO2 **January 2026 – May 2026**

Machine Learning Researcher *Berkeley, CA*

- Built multimodal navigation engine using HA* and Dijkstra's UCS to optimize routes across time, cost, and energy constraints.
- Slashed Neo4j graph query runtime by **96%**---from **50+** seconds to under **2** seconds---enabling real-time pathfinding at scale.
- Architected routing system integrating real-time Transit APIs with layered graph abstractions to deliver low-latency suggestions.
- Developed a data pipeline to ingest high-frequency JSON sensor logs and transform geospatial data into carbon-impact analytics.

CerebrAIx Technologies **February 2025 – September 2025**

Data Science Intern *San Francisco, CA*

- Orchestrated a multi-model inference pipeline tool Xpredict, integrating GPT-4, Claude, and Gemini APIs with SBERT to quantify candidate–job alignment through high-dimensional semantic similarity, recursive prompt engineering, and LLM-based reasoning.
- Engineered a RESTful API with a hybrid scoring architecture using Cosine Similarity filtering to deliver accurate fitment metrics.
- Managed datasets including PDF/DOCX parsing and benchmarked **5+** models to optimize inferential quality, cost, and latency.

Kids Teach Tech **September 2020 – December 2024**

Co-Founder, Director of Seth Bonder Data Science Camp *San Francisco, CA*

- Co-founded Kids Teach Tech, delivering free Data Science and AI classes to underserved youth across the Bay and internationally.
- Grew the team from **5** to **100+** members, helping lead KTT to win the 2024 East Bay Economic Development Alliance Innovation Award for Education, recognized for a unique peer-teaching model reaching youth across the US and internationally.
- Directed **40+** instructors to run a camp for **300+** students in Etcheverry Hall through partnerships with UCB IEOR and GT ISYE.
- Collaborated with Professor Alper Atamturk to finalize a rigorous curriculum aligned with university engineering standards.
- Received the President's Award for exceptional service substantiated by **100+** testimonials from parents and students, while driving measurable increases in organizational engagement, long-term volunteer retention, and tech accessibility for underprivileged youth.

PROJECTS

Hollow | *Python, pytest* **August 2026**

- Built a CLI that strips each tested function's body and reruns its covering tests to expose any code with no assertion checks
- Classifies functions as protected, unprotected, inconclusive or uncovered, with JSON receipts and remediation plans

Physical SOC | Python, MCP, OpenAI Realtime, Hugging Face/Pollen Robotics Reachy Mini **September 2026**

- Built an agent that finds new CVEs every 60s, checks them against the codebase, sandbox-tests a patch and opens a pull request
- Designed a fail-closed merge gate requiring passing tests, Qodo review and spoken SHA approval via a Reachy Mini.

SKILLS/INTERESTS

Python, Java, SQL, C, R, Go, PyTorch, TensorFlow, Scikit-Learn, Pandas, Numpy, Matplotlib, LangChain, Docker, Git, GitHub, Jupyter, Machine Learning, Deep Learning, Transformer Models, RAG, Agentic AI, LLM-based Reasoning, MLOps, Gemini, GPT, LLMs, multimodal architectures, semantic parsing, dialog systems, text generation, Hugging Face, OpenAI, Anthropic, Mistral, LLaMA, AWS, GCP, process mining, workflow intelligence, representation learning, statistical analysis, data mining