Aayan Shah

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Education

Colby College, Waterville, ME – Bachelor of Arts (May 2028)
Major: Computer Science (AI Concentration), Physics | Minor: Mathematics *GPA: 4.15/4.00*
Relevant Coursework: Data Structures & Algorithms, Computer Organization
Awards: Honorable Mention IPhO 2023, Dana Scholar, Presidential Scholar, Dean's List (FA 24, SP 25)

Technical Skills

Programming: C, Python, Java, Dart, VHDL, JavaScript, (HTML/CSS)
Frameworks/Libraries: React Native, TensorFlow, Whisper (OpenAI), ElevenLabs, Hugging Face, NumPy, pandas
DevOps/Tools: Git, GitHub, Docker, NeonDB, Supabase, Clerk, Windows/Linux, Android, Web

Experience

Machine Learning / AI Intern | SureStart May 2025 – Jul 2025
- 10-week internship in machine and deep learning with TensorFlow & Keras, covering CNNs, RNNs, and transformers.
- Trained and optimized models on 50k+ image/text samples; improved classification scores and runtime efficiency
- Dockerized training pipelines, enabling reproducible runs and cutting model deployment time from 90 min → 15 min.
- Collaborated with industry mentors to analyze scaling strategies; prototyped an AI-driven startup idea, AvayLable.

Data Structures & Algorithms Lab TA | Colby College Feb 2025 – Present
- Mentored 30+ students weekly, clarifying algorithmic concepts and debugging code; improved lab completion rate by 18% compared to prior semester and achieved 100% positive feedback.

ITS Student Support Center Technician | Colby College Sep 2024 – Present
- Resolved 120+ IT support tickets per semester (networking, software, printers, classroom tech).
- Configured Wi-Fi security and multimedia setups; reduced classroom downtime incidents by 35%.
- Streamlined software installation process using imaging tools; cut average setup time from 2 hrs → 35 min.

Projects

AvayLable – College Skill-Sharing App | *React Native, Neon PostgreSQL* GitHub
- Led end-to-end design of a cross-platform app to exchange skills (rides) on campus.
- Built backend in Neon PostgreSQL with REST APIs for profiles, chat, and reviews; secured endpoints with JWT auth.
- Introduced geolocation "skills map" and notifications; boosted feature engagement by 35%.

16-bit RISC CPU & Assembler Toolchain | *VHDL, Python* CPU Assembler
- Designed 16-bit RISC CPU in VHDL with 25+ custom instructions, ALU, branching, recursion, and memory subsystem.
- Built two-pass assembler in Python; converts source to .mif machine code, supporting macros and error detection.
- Simulated and verified programs (Fibonacci, I/O) using Quartus; validated hazard handling & control logic.
- Documented ISA and encoding; established FPGA synthesis flow, enabling reproducibility for future extensions.

Voronoi Game on Map – Algorithm Optimization | *Java* GitHub
- Implemented Voronoi Game simulation and modeled competitive facility placement strategies.
- Designed adaptive heuristics combining vertex weights, neighbor influence, and disruption; 96.95% win vs. greedy
- Optimized geometry routines with spatial indexing, cutting runtime by 42%; won 5th place in the entire course.

AI Notetaking App | *React Native, Whisper, Hugging Face* GitHub
- Developed mobile app for live lecture capture; transcribes via Whisper and summarizes via Hugging Face models.
- Implemented full-text search and clustering; enabled retrieval of 500+ notes with <1s latency.
- Implemented systematic plans of future extensions with AI-generated quizzes and spaced repetition reminders

Leadership

Colby Hackers: Relaunched dormant CS club; organized plans for Git/GitHub workshops, 3D printing parties, weekly coding jams, and hackathons. Built 115+ member community; partnered with faculty/alumni for mentorship.
Colby Robotics: Led quadruped robot build integrating Raspberry Pi, motion, and vision sensors. Coordinated team across mechanical/software subsystems