Chris Chang

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Education

Columbia University New York, NY — Expected Graduation May 2029

- Major: B.S. Computer Science (GPA: 3.87/4.0)
- Coursework: Advanced Programming, Data Structures, Projects In Computer Science, Multivariable Calculus, Linear Algebra and Probability

Experience

***Developer I*, PeKe Labs** — May 2026 - Present

- Built the AWE XR 2026 demo: 2-player Pong over dual Web Bluetooth GATT links with authoritative 3-window state sync.
- Cut in-glasses AI response render time by **40%** by swapping full-page SDK rebuilds for scoped text updates.
- Raised gesture recognition accuracy from **85% to 97%** (LOO, n=330) via a Protractor classifier with rotation invariance.
- Deployed end-to-end Xcode Cloud to Testflight CI/CD, automating builds, signing, and beta distribution for the iOS team.

***Research Intern*, Software Systems Laboratory** — Nov 2025 - Present

- Benchmarked 3 frontier LLMs on **649** Three.js tasks, identifying Gemini 3.1 Pro as top performer (96% render-pass).
- Automated review of **~2K outputs** by developing a code and render evaluator with JS Jaccard and DINO/PyTorch.
- Shipped a **649**-case interactive-3D benchmark by scaling a multi-agent drafting pipeline across **1,600+** audited agent runs.
- Mined **22K**+ GitHub repos into **134** benchmark cases via tuned queries, SHA-1 fork dedupe, and headless capture.

***Automation Research Intern*, Creative Machines Lab** — Feb 2026 - May 2026

- Designed an agentic workflow automating alumni data tracking, synthesizing employment data across **100+ profiles**.
- Cut agent scrape time from **5+ mins to 20s/profile** by developing intersection-observer DOM extraction tools for LinkedIn.
- Built an orderbook automation system with Claude API+MCP, cutting inbox processing to **~7s** via SSE early-exit optimization.

***Software Engineering Intern*, Human-Computer Interaction Institute** — Nov 2023 - Apr 2024

- Wrote the user/admin authentication system with login, registration, and profile pages using Flask REST APIs.
- Developed admin dashboard visualizing login, activity, and demographic trends with database controls via Python/SQLite.

Projects

Spex - Speculative Tool Calling Framework for Codex — **2nd Place (Ramp/Cursor/Codex's Builder Cup)**

- Served **80%** of Codex verification calls from speculative pre-runs, cutting total wall time **13.9%** on SWE-bench Verified.
- Predicted agents' next commands at **75%** top-3 held-out recall via a transition table mined from 90K trajectory events.
- Drove **64%** more agent self-verification with 0 added tokens or stale serves across 84 sealed A/B runs.

OpenDisaster - Natural Disaster Simulation Platform — **1st Place (DevFest 2026)**

- Built a modular physics and 3D rendering engine that reconstructs any real-world location interactively.
- Developed 4 disaster modules with real-time structural damage using Three.js and Bun backend, rendered with WebGPU.
- Integrated Gemma-3 agents with reasoning tracing to analyze simulated human behavior and generate casualty reports.

InvestSwarm - Stock Analysis & Prediction Software — **1st Place (CORE/AppDev Hackathon)**

- Developed a multi-agent CLI system in Python for real-time equity analysis and prediction using Dedalus SDK.
- Parallelized an agent-swarm for multi-perspective analysis, returning risk level, confidence, timeframe, and reasoning.
- Integrated Brave Search, Exa, Sonar, and YahooFinance MCP servers into GPT-5 agents for live semantic web search.

Skills

Languages: Python, Java, C, C#, JavaScript, TypeScript, HTML, SQL, Swift

Frameworks/Tools: LangChain, scikit-learn, TensorFlow, Playwright, PyTorch | Flask, FastAPI | Git, Docker, npm, DVC | SQLite

Leadership Activities

Columbia Data Science Society (Board Member): Organized speaker panels and networking events for undergraduates.

Columbia Multicultural Business Association (Committee Member): Hosted 2026 DEI business conference and speaker panels.