Gavin Onghai

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Education

Yale University New Haven, CT

B.S. in Electrical Engineering and Computer Science, B.A. in Mathematics; GPA: 3.72 *May 2027*

- **Hahn Scholarship** - Recognized as one of Yale's top 6 STEM applicants (6 selected, 0.01% of 57,517)
- **Relevant Coursework:** Data Structures, Digital Logic, Multivariable Calc, Linear Algebra, Probability Theory
- **Activities:** Treasurer – Yale IEEE | Full-Stack Dev – Yale Blockchain Club | Fellow - Yale Quantitative Finance Organization, Yale Diversified Investments | Recruitment Chairman - Sigma Chi | Events Coordinator - Asian-ish

Experience

Software Engineer | ***Python, FastAPI, PostgreSQL, Docker, React TS*** Aug 2025 – Present

NIRA (withnira.com) *Remote*

- Engineered multi-source data integration pipelines for Google Calendar, Gmail metadata, and Nyne.ai, automating ingestion into Cloudflare R2 to enhance NIRA's AI-driven search model.
- Integrated Mailgun webhooks into NIRA's FastAPI consent service, building a real-time processing pipeline that parses metadata for downstream AI inference and relationship graph training.
- Deployed backend systems for referral monetization and intro-success tracking on Render using PostgreSQL, n8n pipelines, and async scheduling, automating payouts and improving reliability by 20%.
- Partnered directly with MIT- and Stanford-founded leadership at a South Park Commons-backed AI startup, rapidly prototyping and deploying product-defining features.

Hahn Scholar Researcher | ***Python (NumPy, Pandas, scikit-learn)*** Apr 2025 – Present

Yale School of Engineering and Applied Science *West Haven, CT*

- Developed lensless imaging platform on Raspberry Pi, reconstructing 2D scenes by implementing object-oriented ADMM solver in Python for high-dimensional inverse problems.
- Automated data acquisition through waveplate scripting via serial-port control; processed 50K+ RGB frames into NumPy and Pandas pipelines for batch reconstruction and analysis.
- Applied scikit-learn regression across 19 waveplate angles to compute Stokes parameters, achieving sub 5% reconstruction error in polarization estimation

Software Engineer | ***Python, React*** Feb 2025 – Present

Yale Computer Society *New Haven, CT*

- Developed and maintained features for Yale Menus, a full-stack dining mobile app serving 5,000+ monthly users.
- Contributed to the Python-based scraping and API wrapper backend, reducing meal data delivery delay by 20%.
- Collaborated with an engineering team to push updates, ensuring great user experiences across iOS/Android.

Research Internships Stony Brook, NY

Simons & Garcia Summer Research Programs *June 2022 – Sept 2023*

- Studied Fe(II)-catalysts for the oxidation of cellulose; achieved **+15%** yield, validated via FTIR and titration.
- Engineered a 3D-printable, conductive, biodegradable filament; **8**× conductivity increase via polymer blending.
- Measured tracer diffusion in nanocomposite blends using DSIMS; co-authored paper in ACS Macromolecules.

Vice President and Web Developer | ***JavaScript*** Aug 2023 – Aug 2024

Mission Toothbrush 501(c)(3) *Greater Long Island, New York*

- Led drives and managed operations for a nonprofit distributing $70K+ in hygiene supplies for local communities.
- Developed and launched a public webapp using JavaScript to spread awareness, increasing outreach by 10%.

Projects

MIPS Processor with Memory-Mapped I/O | *Verilog, Xilinx Vivado, Basys 3 FPGA* Apr 2025

- Built and deployed a single-cycle MIPS processor in Verilog with memory-mapped I/O on a Basys 3 FPGA; demonstrated a crawling snake animation via 7-segment LEDs and earned a perfect score on the lab final.

Technical Skills

Languages: Python, C, C++, JavaScript, SQL, HTML, CSS, Verilog, Typescript
Frameworks: Node.js, React, TailwindCSS, FastAPI, Next.js
Developer Tools: Windows, Linux, Xilinx Vivado, VS Code, Git, Bash/Shell, PostgreSQL, Docker, Vite
Libraries: NumPy, Pandas, Matplotlib, scikit-learn