

JOHNATHAN MO

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Education

Columbia University

New York City, NY

Bachelors of Engineering in Computer Science

Expected May 2027

- **GPA:** 3.91/4.0 — Deans List | **Selected Coursework:** Data Structures, Advanced Programming, Operating Systems, Databases, User Interface Design, Discrete Math, Linear Algebra
- **Activities:** Columbia Organizatoin of Rising Entrepreneurs, Columbia Graphical User Interface Lab, Columbia Build Lab, Application Development Initiative, Tawianese American Student Association E-board

Experience

Google

Sunnyvale, California

Software Engineering Intern

May 2025 - Aug 2025

- Slashed over **\$250,000** in compute costs annually by implementing a native VM root filesystem for Google's global compute fleet using **C++** that increased read performance by **96.3%** and write performance by **60.12%** by removing the necessity for a host-to-guest passthrough filesystem.
- Independently designed the system and added repeatable benchmarks confirming read/write gains; implemented comprehensive **Unit Tests** and **Integration Tests** to ensure robust deployment of the VM filesystem solution.

Mayah Design

Hybrid in NYC, New York

Software Engineering Intern

August 2024 - January 2025

- Improved customer retention by 39% by constructing a product visualization features using **React.js**, **TailwindCSS**, and **Node.js** for a novel interior design recommendation web platform as measured by internal analytics.
- Collaborated with product managers, other developers, and the CEO to deploy code over **AWS** and **Docker**. Utilized **SQL** and **Spring Boot** to optimize the furniture database, leading to a 60% increase in recommendation accuracy.

National Institute of Biomedical Imaging and Bioengineering (NIBIB)

Bethesda, MD

Software Engineering Summer Intern, IDEAS Lab

June 2024 - August 2024

- Launched a medical augmented reality application tool for, integrating **Unity**, **C#**, and **Photon Fusion** for multi-user interactions. Leveraged **OpenAI** and **Microsoft Azure Speech Cognition Services** for intelligent voice commands.
- Altered NIH's AR research roadmap as youngest intern by presenting project to the Scientific Director of the NIBIB and a team of 12 surgeons and residency students to demonstrate the potential for AR to transform surgical workflows.

Stanford Ophthalmic Informatics and Artificial Intelligence Group

Palo Alto, CA

Research Intern

May 2023 - September 2023

- Executed self-led research leveraging **Google Cloud Platform**, **Hugging Face Transformers**, **NumPy**, **Pandas**, **PyTorch**, and **Gradio** to compare CNNs against visual large language models for glaucoma recognition.
- Harnessed **few-shot** and **chain-of-thought** prompting to improve VLLM performance by 30%.

Personal Projects

Semantic Search for LinkedIn (Click Here)

- Created Locked In, a full stack app that uses dynamic **SQL** generation and **vector embeddings** to enable 750+ users to search LinkedIn with natural language and automatically generate and send cold emails using the **Gmail API** and **LinkedIn API**. The product launch went viral on LinkedIn, X, and YouTube, garnering over **200,000 impressions**.

Multiplayer Typeracing Game (Click Here)

- Launched PlayTypr.com, a real-time multiplayer typeracing game built using **Python**, **TypeScript**, **WebSockets**, **Express**, **Vite**, **Firebase Auth**, and deployed with **Railway**, reaching \approx **1,000 daily active users at peak**.

Manu.AI

- Implemented image-based questions using **OpenAI API**, **Supabase**, **FastAPI**, and designed frontend using **Next.js** to create a **B2B Full Stack** service turning inconvenient traditional user manuals into interactive digital knowledgebase with chat and image query capabilities. Deployed with **Docker** and stored files with **Amazon S3**.

Technical Skills

Awards: TreeHacks 2025 Grand Prize, Afore Grant Fellow, Deans List x2, USABO Semifinalist, National Merit Finalist

Languages: C, C++, C#, Python, Java, HTML/CSS/JavaScript, SQL, TypeScript, Bash, Protobuf

Technologies/Frameworks: Git, PyTorch, Next.js, React, MRTK3, Photon, Redis, Heroku, TensorFlow, Linux/UNIX, gRPC, LangChain, CI/CD, Tmux, Docker, Postman, Vercel, Netlify, Unity, Xcode, Figma

Interests: Content Creation, Video Editing, Vlogging, Calisthenics, Hiking, Swimming, Saxophone, Anime