Biya Brook

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Education

Stanford University - Stanford, CA | 3.89 GPA   June 2027
B.S. in Computer Science & B.A. in Linguistics
Relevant Coursework: Data Structures & Algorithms, Probability for Computer Scientists, Linear Algebra & Multivariable Calculus, Accelerated Programming Methodologies in JavaScript and Python

Experience

Machine Learning Researcher   June 2023 - August 2024
Harvard Medical School & Boston Children's Hospital   *Boston, MA*
- Trained and validated a 3D U-Net CNN ML model to segment bones from MRI & CT scans, improving model success rate from **10% to 85%**
- Created 3D knee models of ACL injuries for mock surgeries using automatically segmented MRI data
- Performed statistical analysis of pre-operational & post-operational clinical notes

Lead Software Engineer & Founder   April 2023 - Present
Schola Latinae   *Boston, MA*
- Developed an educational platform using Next.js that helps **over 3,000 students** learn Latin & Greek for free
- Programmed an algorithm that recommends practice questions based on past success, over **10k qs answered**
- Edit video lessons and release them on YouTube; Design social media marketing posts using Photoshop

Math & SAT Tutor   November 2024 - Present
Transform Tutoring   *Palo Alto, CA*
- Provide individualized 1 on 1 tutoring to Bay Area high school students over zoom and in person
- Create curricula tailored to each student's academic needs and focus areas

Projects

Player Prop EV Model | *Python, Pandas, NumPy, SciPy, NBA API, The Odds API*   March 2025
- Developed a statistical model using Bayesian inference to identify value in NBA player prop markets
- Implemented sequential Bayesian updating to account factors such as opponent and recent performance
- Identified positive EV opportunities through comparing model-generated vs. implied market odds

Solana Rivals | *Typescript, Express.js, Next.js, TailwindCSS, Shadcn UI, Supabase, Docker*   February 2025
- Built the first gamified crypto trading platform with personalized, autonomous competing AI-powered agents
- Developed an algorithm that analyzes real-time coin data and user preferences to inform trading decisions
- Achieved up to **300%** projected 24-hour profit in volatile market conditions by optimizing agent settings

InboxRecap | *Javascript, Next.js, React, Joy UI, Gmail API, OpenAI API, Resend*   August 2024
- Run an inbox management software that sends daily summary emails of one's inbox & helps bulk unsubscribe
- Leverage Gmail API to clean user's inbox, OpenAI API for summarizing, and Resend for sending emails

Skills

Coding Languages: Python, C/ C++, JavaScript, TypeScript, Swift, HTML/CSS
Frameworks & Libraries: Next.js, React.js, Flask, Node.js, Express,js, Tailwind CSS, Pandas, NumPy, SciPy
Language: Bilingual in English and Amharic; Studied Mandarin Chinese, Latin, Ancient Greek, and Ge'ez

Extracurricular Activities

- SSO (Stanford Symphony Orchestra), *Percussion/Timpani* (2024 - Now)
- Stanford Students in Biodesign & Biopharma, *Digital Health* (2024 - Now)
- Stanford Daily, *Sports & Crossword* (2024 - Now)

Honors & Awards

- **11x** National Certamen Winner, **3x MVP**
- Harvard Certamen, *1st Place & MVP,* (2021)
- 22-23 Community Service Award **(250+ vol. hrs)**
- MA Seal of Biliteracy in *Amharic & Latin*
- National Latin Exam, *Perfect Score* ('19, '21, '24)