



# Biya Brook

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## Education

**Stanford University - Stanford, CA**

June 2027

B.S. in Computer Science & B.A. in Linguistics

Relevant Coursework: Data Structures & Algorithms, Computer Organization & Systems, Probability & Machine

Learning for Computer Scientists, Linear Algebra & Multivariable Calculus

## Experience

**Software Engineer**

April 2025 - Present

*Burton Algorithms*

*San Francisco, CA*

- Lead the development of full stack, AI-first applications from concept to production for startups
- Built ConcertBuddy, a full-stack social concert discovery app integrating Ticketmaster, and RevenueCat; engineered user-matching logic and popularity-based concert ranking from scratch

**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 on MRI & CT scans to segment bones, 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 for pre-operational & post-operational clinical notes classification

**Lead Software Engineer & Founder**

April 2023 - Present

*Schola Latinae*

*Boston, MA*

- Developed an educational platform using Next.js that helps **over 4,000 students** learn Latin & Greek for free
- Programmed an algorithm that recommends practice questions based on past success, over **10k qs answered**
- Produce video lessons with **2,500+** views on YouTube; Design social media marketing posts using Photoshop

## Projects

**NBA Player Stats Predictor** | *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)