AUSTIN LIU

469-975-8324 | `austin_f_liu@brown.edu` | austinliu.dev | github.com/austinliu05 | linkedin.com/in/austin-f-liu

EDUCATION

Brown University   Providence, RI
B.S. in Applied Math-Computer Science, B.A. in Economics   *2027* | **GPA** *3.9*
- **Relevant Coursework**: Operating Systems, Deep Learning, Data Structures and Design of Algorithms, Statistical Inference, Applied Ordinary Differential Equations, Computational Probability, Investments

WORK EXPERIENCE

Symbotic   May 2025 - Current
Software Engineer Intern   *Boston, MA*
- Optimized mobile application API by refactoring unbounded SQL queries, reducing query latency by **50%**
- Automated database health-check procedures to validate **20,000,000+** SKUs, maintaining data integrity at **99.95%**
- Developed **C# application** following strict object-oriented design, deployed across **10+ sites** nationwide

Helios Technologies   February 2025 - May 2025
Software Engineer Intern   *Remote*
- Prototyped **self-hosted GraphRAG** with vector and graph database, enabling faster and more accurate querying
- Built internal moderation tool with **1000+ entries**, using virtualized lists to optimize for low-latency updates
- Managed **AWS services** (Lambda, AppSync, DynamoDB) and performed QA for web app used by **1,000+** users

PROJECTS

Beya | *React Native, Firebase, Pinecone, AWS*   November 2024 - Present
- Built **RAG pipeline** using **vector databases** and **LLMs** to streamline core operations from marketing campaigns to website development
- Generated **$20,000+** in annual recurring revenue through **SaaS** web solutions tailored for small-business clients
- Built internal analytics tool, tracking **1,000+** user events within iOS app to provide insights into user behavior

Guitar Tab Transformer | *React, Django, TensorFlow, Python*   June 2024 - Current
- Collaborating with graduate researcher to develop a **transformer model** converting .mp3 files into **guitar tabs**
- Modified **dadaGP open-source package** to support single-track guitar input, and irregular tuning transposition
- Benchmarked Hugging Face tokenizers (e.g. Word-level, WordPiece, BPN), adopted **WordPiece** for enhanced tokenization accuracy in development for **transformer model**

Pitch Detection and Notehead Detection in Sheet Music | *OpenCV, TensorFlow*   February 2025 - May 2025
- Built **OpenCV−TensorFlow pipeline** to process **5,000+** sheet-music images, applying morphological operations and watershed segmentation to isolate noteheads
- Trained **CNNs** to identify noteheads (e.g. quarter, whole, half) and their pitches, achieving **95% accuracy**

LEADERSHIP

Backend Software Lead   September 2024 - Present
Brown Formula Racing   *Providence, RI*
- Leading team of **10 engineers**, facilitating design discussions, delegating tasks, and **mentoring underclassmen**
- Placed **top 20** in nation, collaborated with other **subteams** to efficiently gather requirements and translate into agile-style **Scrum Sprints**

SKILLS

Languages: Python, C#, C, C++, Java, JavaScript/TypeScript, SQL, CSS, HTML
Tools: XCode, Firebase, Amazon Web Services (AWS), Google Cloud Platform (GCP), Azure, Hugging Face, MySQL
Frameworks/Libraries: React, React-Native, Expo, NextJS, Flask, Django NodeJS, Socket.IO, .NET, ExpressJS
Interests: Fingerstyle Guitar, Brown Men's Volleyball, Steak and Sushi, Sports