

Luke Tu

EDUCATION

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Brown University

B.S. in Computer Science, Economics

Expected May 2026

GPA: 4.0, ACT: 36/36

- **Activities:** Brown Entrepreneurship (Alumni Relations), Full Stack at Brown (Developer), Club Lacrosse
- **Recognitions** 2x AIME Qualifier, Presidential Scholar Nominee, Jane Street Estimathon (2nd)
- **Courses:** Data Structures & Algorithms, Software Engineering, Computer Systems, Data Science, Statistics

EXPERIENCE

AI / Machine Learning Software Intern

June 2024 – September 2024

Washington University School of Medicine

Saint Louis, MO

- Designed and developed an AI tool to classify 3D Mappings of involuntary muscle contractions
- Consulted with PhD students, professors, and doctors, to ensure timely development aligned with clinical needs
- Integrating mappings to differentiate between anterior, posterior, fundus, and cervix areas, enhancing precision
- Used **Python** and **MATLAB** and libraries such as **NumPy**, **SciPy**, and **Pandas** to develop the tool, ensuring efficient model training and evaluation through proper data cleansing and processing of 10,000+ 3D mappings

Data Science Intern

November 2023 - January 2024

Donald Danforth Plant Science Center

Saint Louis, MO

- Engaged in computational analysis of circadian lipid production and structural variations in *Arabidopsis* using bioinformatics tools, applying data modeling techniques to identify trends and optimize plant growth efficiency
- Wrote **SQL** queries to analyze large-scale datasets, streamlining data processing and reducing manual effort
- Attended meetings with staff scientists, learning about the next year's experiment proposals and planning

Strategy and Analytics Intern

April 2023 – June 2023

Arch Grants

Saint Louis, MO

- Formulated growth strategies to improve engagement after analyzing social media performance across 4 platforms
- Developed and helped implement a new weighted startup evaluation methodology used on 1682 cases to select top-performing startups by cross-comparing assessments and ratings by 13 past founders and executives
- Analyzed historic data to determine up-to-date activity and engagement for 3050+ current and former partners

PROJECTS

PickupAt

Crud Application

Storybook, Typescript, React, Node.js, FastAPI, SQLAlchemy, PostgreSQL, WebSocket, Supabase

- Developed a full-stack **CRUD application** to enable college students to organize and join pickup sports events, incorporating **create, read, update, and delete operations** for managing sessions, user profiles, dynamic friend suggestions, real-time live chats
- Designed and built the frontend with **Storybook**, **React**, and **Typescript** to create a user-friendly interface
- Built the backend with **Node.js** and **FastAPI**, managing logic for user actions and real-time updates
- Designed and managed **PostgreSQL** database schemas using **SQLAlchemy**, utilizing **Alembic** to automate database migrations, ensuring smooth schema updates and efficient data storage and retrieval
- Integrated **Supabase** to manage the **PostgreSQL** database, providing secure scalable, and efficient data storage
- Leveraged **WebSockets** for real-time chat and session updates, ensuring live interactive features for participants

GeoReview

Full-Stack Application

Figma, React, Typescript, Tailwind CSS, Firebase, Mapbox API, Clerk, Node.js

- Developed a map-based application using **React** and **Typescript**, allowing users to drop pins, leave reviews, and explore historical redlining data through interactive overlays powered by **Mapbox API**
- Integrated **Firebase Firestore** to persist user-generated pins and reviews, enabling real-time updates
- Implemented secure authentication and session management using **Clerk** for user access and data protection
- Used API endpoints to serve filtered **GeoJSON** redlining data using bounding boxes for enhanced interactivity
- Implemented a keyword search feature with backend processing to highlight map areas based on user input
- Tested user-focused features through iterative feedback, refining the UI for an intuitive and engaging experience

SKILLS AND INTERESTS

Programming Languages: Java, Python, JavaScript, Typescript, HTML/CSS, SQL

Tools: Figma, Storybook, Google Suite, Adobe Suite, Microsoft Office, Git

Interests: Basketball, Football, Grilling, Kinesiology, Golf, Greek Mythology, Making Playlists