

Joshua Yue

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🎓 EDUCATION

University of Texas at Austin

Bachelor of Science in Computer Science, Mathematics; GPA: 3.98/4.00

Austin, TX

Aug. 2023 – May 2027

📁 EXPERIENCE

Software Engineering Intern

May 2025 – August 2025

USAA

San Antonio, TX

- Architected and optimized enterprise data pipelines processing 20TB+ daily traffic into scalable data lakes for Fortune 100 operations.
- Developed Go binaries for key creation API integration, enabling automated authentication key retrieval for secure infrastructure deployments.
- Containerized Go binaries with Terraform CI image using Docker, deployed via GitLab CI/CD pipelines to authenticate Terraform connections to DBT/Snowflake data lakes.
- Modernized AWS Glue Terraform infrastructure for enhanced modularity and deployment flexibility, implementing Apache Iceberg integration with Spark table modifications.

Private Tutor

January 2023 – Present

Self-Employed

- Mentored 10+ students in advanced mathematics including algebra, calculus, and number theory, significantly improving conceptual mastery.
- Developed personalized learning frameworks and diagnostic assessments, strategically targeting knowledge gaps for sustained academic excellence.

🔧 PROJECTS

HarmonAIzer | Python, FastAPI, React, TypeScript, PyTorch

April 2025 – June 2025

- Architected full-stack MIDI harmonizer featuring interactive React piano interface and FastAPI backend with dual harmonization engines (rule-based algorithms and PyTorch LSTM neural networks).
- Developed sophisticated music analysis pipeline leveraging Music21 for automated key detection and melody parsing, generating contextually intelligent chord progressions.
- Deployed neural network trained on Bach chorales dataset, empowering users to select harmonization styles and export professional multi-track MIDI compositions.

Cloud Simulator | C++

January 2025 – May 2025

- Engineered comprehensive cloud simulation engine modeling task scheduling across heterogeneous virtual machines with diverse compute and GPU resources.
- Researched, implemented, and benchmarked multiple scheduling algorithms from academic literature to optimize energy efficiency, minimize SLA violations, and maximize system throughput.
- Innovated custom leveled scheduler inspired by heterogeneous CPU architectures, reducing energy consumption by 20% while maintaining 95%+ SLA compliance.

My Journal Buddy | Backend Team | Python, Flask, PostgreSQL, Docker

August 2023 - May 2024

- Architected secure user authentication and private journal management system utilizing JWT tokens and RESTful API design principles.
- Engineered and deployed PostgreSQL database with end-to-end encrypted data storage for enhanced user privacy.
- Executed agile development methodology within cross-functional team of 6 developers

🏆 EVENTS

UT Energy AI Hackathon | Python, Scikit-Learn

2nd place

- Secured 2nd place among 30+ competitive teams by developing high-precision machine learning model for energy demand forecasting.
- Engineered advanced CatBoost model with sophisticated imputation and feature engineering, achieving 0.480 MAPE compared to 2.0 team average.
- Presented compelling data visualizations and technical insights to industry experts, earning top 3 in presentation competition.

⚙️ TECHNICAL SKILLS

Languages: Java, C/C++, Python, Assembly, R, JavaScript, HTML/CSS, SQL, Golang, Shell

Frameworks: React, Node.js, Flask, JUnit, Django, FastAPI, TypeScript

Cloud/DevOps: AWS, AWS Glue, Docker, Terraform, GitLab CI/CD, Google Cloud, Artifactory, YAML

Data Technologies: Apache Spark, Apache Iceberg, DBT, Snowflake, PostgreSQL

Developer Tools: GDB, Git, Microsoft Office, Agile, Postman

Libraries: pandas, NumPy, Matplotlib, PyTorch, Music21, Scikit-Learn, CatBoost