Anh Thi Tram Tran

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Education

University of Wisconsin-Madison — Madison, WI
Bachelor of Science in Computer Sciences. GPA: 3.64/4.0 — *Sep. 2021 – Dec. 2023*

University of Wisconsin-Milwaukee — Milwaukee, WI
Bachelor of Science in Computer Sciences. GPA: 3.9/4.0 — *Sep. 2020 – May 2021*

Relevant Courses
Algorithms, Database Systems, Virtual Reality, Linear Algebra, Applied Statistics, Computer Graphics, User Interfaces

Experience

Database Researcher — Jun. 2023 – Present
University of Wisconsin-Madison — *Madison, WI*

- Utilized the Parquet file format specification as a reference for understanding encoding mechanisms
- Analyzed and compared encoding techniques (like delta encoding for time-series) for data storage and retrieval performance by replicating them in C++

Projects

Enigma Machine Simulator | *Java, SQL, AWS RDS, HTML, CSS, JavaScript, Springboot, Docker, JUnit*

- Setup AWS RDS for MySQL and handled all CRUD through Java JDBC Connection
- Developed Java code to connect to MySQL database and execute SQL statements to store, retrieve, and manipulate rotor configurations, messages, and user data
- Created interactive UI features in JavaScript, including dynamic display updates triggered by rotor and plugboard changes and custom keyboard handling to capture key presses for encryption and live ciphertext display
- Architected core Enigma encryption algorithms and components in Java, including developing JUnit integration tests to validate correct encryption/decryption behavior
- Contributed to dynamic 6-person team applying agile principles, including weekly sprints, retrospectives, and continuous integration to design, build, and demo the Enigma emulator incrementally

Six Degrees of Wikipedia | *Java, JUnit, JavaFX, FXML*

- Constructed a graph of adjacent Wikipedia articles by scraping Wikipedia HTML data using JSoup
- Applied Dijkstra's Algorithm to find the shortest path between two articles on worker thread. On the user thread, handled redirections and kept track of browsing history as part of the game
- Packaged and deployed client-facing .jar file via Makefile with 100% code coverage via JUnit
- Collaborated within a team of 4 to develop the JavaFX front-facing user interface

VR Battle Chess AI | *C#, Unity*

- Designed and implemented a Chess AI engine using C# and machine learning algorithms, including Monte Carlo Tree Search and Minimax with alpha-beta pruning
- Collaborated with teammates to optimize VR configurations for enhanced gameplay, including audio settings, movement tracking, and comfort adjustments
- Integrated user feedback to balance the difficulty of the AI by changing search parameters

Online Portfolio | *Javascript, HTML, CSS, SCSS, React, Sanity*

- Developed a React framework website using HTML, CSS, and JavaScript to showcase my skills and experience
- Integrated a responsive design via hooks and states and incorporated a messaging system using Sanity backend

Technical Skills

Languages: Java, Python, C/C++, C#, SQL, JavaScript, HTML, CSS, R
Frameworks: React, Node.js, JUnit, AWS RDS, Docker
Other: Git, pandas, NumPy, Matplotlib, Excel