DUONG HOANG VU

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My goal is to be able to work on new interesting and challenging problems. I am looking for opportunities that allow me to gain experience and grow as a computer scientist.

EDUCATION

Iowa State University (Ames, IA) Expected Graduation: May 2023

Bachelor of Science in Computer Science Major GPA: **3.7**/4.0

Honors: Dean's List (4 Semesters) Cumulative GPA: **3.65**/4.0

Skills: · React, Tailwind CSS, Flask, Socket.IO, Spring Boot, Android Studio, Git, CI/CD, Mockito, OpenGL, OpenCV

PROJECTS

Facial Detection Web App *December 2021 – Ongoing*

- Ported my previous facial detection project onto the web by using React for the frontend and Flask for the backend.
- Eliminated the need for python libraries in the frontend by sending images using Socket.IO to the backend for detecting faces.
- Reduced facial detection frame time up to 50% by handling resizing and gray scaling in the frontend instead of in the backend.
- Decreased server's response size by 95% by only sending the faces' coordinates and rendering them on the frontend instead of sending back whole pre-rendered images.

Online Portfolio *December 2021 – Ongoing*

- Rebuilt my online portfolio to make it more responsive and scalable by using React and Tailwind CSS.
- Improved the site's animations by utilizing hooks.

Golfer Social Media App *(ComS 309 Project)* *August 2021 – November 2021*

- Developed an android app using Android Studio for the UI, Spring Boot for the server, and MySQL for the database.
- Structured the frontend and backend using the MVC-Service design pattern for easier maintenance and scalability.
- Designed the REST API and business logic to provide all the functionalities the app needs.
- Implemented a real-time public chat room for the app users using WebSocket.
- Used GitLab CI/CD to automatically build, run Mockito tests, and deploy the server.

Ray tracer *(ComS 336 Project)* *August 2021 – November 2021*

- Created from scratch a ray tracing engine that can generate realistic images using C++.
- Improved images' quality and reduced noises by implementing anti-aliasing.
- Increased color accuracy by implementing ray's bouncing property and materials' reflective properties.

Facial Detection *(Python + OpenCV)* *June 2021 – August 2021*

- Refined OpenCV haar-cascade to better detect tilted faces by 30% by doing selective scans in different orientations.
- Alleviated workload on the CPU and increased performance by 100% by incorporating multithreading into the program logic.
- Designed and implemented custom debugging tools to help fix bugs and boost development speed.

Tetris Web Application *July 2020 – August 2020*

- Created a Tetris web app with gameplay as close as possible to Tetris 99 using JavaScript.
- Designed and implemented the game engine to simulate Tetris 99 physics and sound effects.
- Reduced web browser's workload by engineering a graphic engine that only re-renders parts that are necessary.

LEADERSHIP EXPERIENCE

Computer Science Help Room Ames, IA

Tutor *August 2021 – Present*

- Assisted students with comprehending materials from all 300-level Computer Science courses by identifying their knowledge gaps.
- Guided students through problems by reminding them of concepts taught in class or giving them examples of similar problems.
- Taught students the problem-solving skills required for them to succeed in their courses.

React Web App (ComS 319 Project) Ames, IA

Project Leader *August 2020 – November 2020*

- Managed the team project by planning milestones and distributing the workload among team members.
- Made sure everyone was not having any problems impeding their progresses by checking up on them weekly and offering help.
- Brought the whole project together by integrating team members' works into one website.