

Thomas Vu

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Projects

DOCTALK | React, Nodejs, MongoDB, Tailwind CSS

Ignition Hacks 2024

- Developed a web application to assist doctors in **recording**, **transcribing**, and **summarizing** conversations with patients, aiding in critical decision-making.
- Built the frontend using **React** and **Tailwind**, with **Node.js** and **Express.js** backend connected to **MongoDB** database.
- Implemented **secure** authentication and authorization using **JWT tokens**, ensuring only authorized users can access the app, with **session persistence** and **automatic logout** for enhanced security.
- Integrated **AI** to accurately **transcribe** conversations, identify speakers, and **summarize** key points for better analysis.
- Automated the **generation** of PDFs containing essential patient information for easy access by doctors.

REAL-TIME CHAT APPLICATION | HTML, CSS, JavaScript, Django

- Developed a **real-time chat application** as a personal project, leveraging **HTML**, **CSS**, **JavaScript**, and **Django** framework.
- Utilized Django web framework, coupled with pre-made **HTML** and **CSS** templates, ensure efficient front-end design.
- Integrated **SQLite** database to store user data, chat-room information, and messages.
- Implemented real-time communication features using **Ajax**.

COURSE DASHBOARD | HTML, CSS, JavaScript, Python

Hacks Western 9

- Integrated **web scraping** techniques to extract course information from the Western University website, including course details and PDFs of textbooks.
- Utilized **Python** to fetch professor ratings and reviews from RateMyProf.Com, enhancing the dashboard's functionality and providing valuable insights to students.
- Demonstrated full-stack development capabilities by combining front-end and back-end technologies to create a seamless and user-friendly dashboard for accessing course materials and professor information.

ELEMENTAL FLIP | Godot

LoJam (London Game Jam) 2024

- Collaborated with a team of 4 to develop a 2D action game in the **Godot** engine, implementing physics-based algorithms for **collision detection** between projectiles, players, enemies, and walls.
- Utilized linear interpolation (**LERP**) to achieve smooth movement for projectiles and enemy characters.
- Integrated sound effects and animations to enhance gameplay immersion.
- Ensured **compatibility** with both keyboard and controller inputs for versatile user experience.

MAZE GAME | Java

- Developed a maze game in **Java** featuring health, walls, coins, fire, and an exit path.
- Implemented a modified **Dijkstra** algorithm to collect all coins and find the shortest path to the exit while avoiding hazards.
- Designed fire mechanics to reduce player health, adding a strategic layer to navigation.
- Conducted unit testing with **JUnit** to ensure algorithm accuracy and game stability.

Skills and Interests

Programming Languages: C, C++, Java, Python, JavaScript, Lua, Bash

Web Development: HTML, CSS, Tailwind CSS, JavaScript, React.js, Express.js, Node.js, Django (Python), Vercel, Render

Databases: MySQL, SQLite, MongoDB, NoSQL

Technologies: Git, JUnit, Microsoft Office Suite, VS Code, Eclipse, IntelliJ IDEA, PyCharm, CLion, Godot Game Engine, Figma

Additional Skills: Active Learning, Team Collaboration, Project and Time Management, Strategic Thinking, Problem-Solving

Interests: Linux Distro Customization, Non-Fiction Reading, Human Psychology, Badminton, Mathematics

Education

UNIVERSITY OF WESTERN ONTARIO

London, Ontario

Bachelor of Science in Computer Science (GPA: 3.8+)

- **Relevant Coursework:** Data Structures and Algorithms, Object Oriented Programming, Information Systems and Design, Communications and Multimedia, Software Tools and System Programming, Computer Architecture, Data Science, Statistics and Probability
- **Current Coursework:** Artificial Intelligence, Cybersecurity, Computer Networks, Operating Systems, Computer Organization, Software Development Life Cycle
- **Achievements:** Dean's Honour List 2022-2024