Thomas Dinh Le

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Education

California Polytechnic State University - San Luis Obispo, CA Sept. 2022 - June 2026

Bachelor of Science in Computer Science

Relevant Coursework:

Software Engineering | Data Structures | Object-Oriented Project and Design | Database Systems | Design and Analysis of Algorithm | Bioinformatics Algorithms

Technical Skills

Languages: Python, Java, SQL, JavaScript, HTML/CSS, C

Developer Tools: Visual Studio Code, Git, Pycharm, IntelliJ, Anaconda

Database: MongoDB, mySQL

Frameworks: React.js, Next.js

Experiences

Hack4Impact - *Software Developer* Oct. 2024 – Present

California Polytechnic State University - San Luis Obispo, CA

- Collaborated closely with the team to build a web app for a nonprofit that helps volunteers track and care for local trees.
- Designed a form using **React** and **Chakra UI** for volunteers to log tree data, rate health, choose issues, and add notes.
- Implemented a scrollable table with page buttons using React hooks and Chakra Table to browse submitted trees easily.
- Connected the form to a **MongoDB** backend with **Next.js** to save tree location, health rating, and volunteer notes.

Bioinformatics Research Assistant - *UTI Metadata Prediction Project* Jan. 2025 – Present

California Polytechnic State University - San Luis Obispo, CA

- Created a classification decision tree using patient demographics, history, and symptoms to predict **UTI pathogens**.
- Planned to organize electronic health record data **(EHR)** using **Python** and **Pandas** to improve model accuracy.
- Explored the Galaxy Project to research **genome tools** that help verify predicted pathogens and improve model performance.

Projects

Personal Website Web Development | ***React, TypeScript*** Oct. 2024 – Dec. 2024

- Developed a **personal portfolio** to showcase my photography and videography, handling media uploads and content management.
- Implemented a **blogging system** with **MongoDB**, allowing users to add, edit, and delete posts.
- Added a **commenting feature** with authentication and spam filtering for real-time discussions.
- Styled the website using **CSS and Tailwind**, ensuring a clean and responsive layout.
- Integrated a **contact form** with email notifications, allowing visitors to reach out directly.
- Deployed on **Vercel**, setting up automated builds and continuous deployment for instant updates with every code push.

Pomodoro Productivity Web Development | ***React, JavaScript*** Aug. 2024 – Dec. 2024

- Designed a **Pomodoro app** with a timer, to-do list, and calendar using **React, HTML, CSS, and JS** to help users stay organized.
- Added **user login** so people can save their tasks and keep track of progress across sessions.
- Optimized the UI **fully responsive** with smooth animations so it looks and works great on any device.
- Connected a **backend API** to store tasks and user settings, making sure everything stays saved.
- Deployed the backend on **Microsoft Azure** with auto-scaling to keep the app running smoothly no matter the load.
- Set up **CI/CD pipelines** with GitHub Actions to automate testing, builds, and deployments for fast, reliable updates.

2D Open-World Game Development | ***Java*** Aug. 2023 – Dec. 2023

- Engineered a **Java-based** 2D open-world game with tile-based movement, managing players, NPCs, and mechanics using **Object Oriented Programming**.
- Refactored code into **modular classes** and reusable functions, making AI movement and game logic easier to maintain.
- Implemented **A* pathfinding** so NPCs could navigate obstacles and reach targets smoothly.
- Used **inheritance** and **interfaces** to create flexible entities like players, enemies, and objects.
- Handled game crashes with **exception handling**, preventing unexpected bugs.
- Developed **collision detection** to block movement through walls and trigger in-game events.

Table Check-In Sensor System | ***Java*** Aug. 2022 – Dec. 2022

- Built a sensor system using **Adafruit** light/motion sensors to track real-time seat occupancy.
- Designed a **detection algorithm** to filter out environmental noise and improve accuracy.
- Adjusted sensor settings and improved code to make sure seat tracking was always accurate in real time.
- Added a **timer function** to ignore quick movements and prevent incorrect seat detections.