

Tom Gallagher

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Education

University of Canterbury - Ongoing

Bachelor of Engineering (Honours), Software Engineering

Expected Nov 2025

GPA: 6.30

Havelock North High School

NCEA Level 3

Completed 2021

Projects

Chess Engine with Integrated Board GUI: I developed a chess engine in Java, utilising the minimax algorithm with alpha-beta pruning to evaluate positions recursively after each available move. The system uses bitboards for an efficient representation of the chessboard, with evaluations based on both piece value and positioning. It also includes an opening parser that processes PGN (Portable Game Notation) strings, allowing the engine to replicate grandmaster-level openings. The move engine is integrated with a JavaFX-based GUI, enabling users to play a complete game of chess against the program. This is a personal passion project, so the repository is available on Github github.com/TomGallagher2003.

GreenThumbs - Spring Boot Application: I developed GreenThumbs as part of an 8 person team for SENG302, a full-year project course. GreenThumbs is a Spring Boot application that connects casual gardening workers with individuals looking to have gardening tasks completed. This course utilised the scrum agile development framework, including regular planning sessions, meetings, demos, reviews and retrospectives. For the first semester, we were given user stories and acceptance criteria by the teaching staff, and in the second semester we defined our own product vision and created our own stories and ACs. The tech stack for this project includes Java, Spring Boot, Vanilla JavaScript, HTML with Thymeleaf, CSS, MariaDB Relational Database, SQL, JUnit, Cucumber, Nginx, Microsoft Azure Content Moderation, OpenWeather API, Geoapify Location API, and Flying Saucer. The production instance of our application is available at csse-s302g2.canterbury.ac.nz/prod. The repository for this project is available upon request.

Petition Manager: RESTful API with React Frontend: I created a petition manager web application for SENG365, a web computing architecture course. This included a Restful API to manage database interactions, and a react application for the front end. The tech stack for this project included React, Node.js, TypeScript, JSX, Material UI, CSS, MySQL Relational Database. The repositories for each of these are available upon request.

Pong Game - Microcontroller Project: I developed a ping-pong game with a partner for the UC Fun Kit microcontroller, for ENCE260, an embedded systems course. This included managing the LED display of the fun kit, and accepting input from the buttons and joystick. This project was implemented using C. The repository for this project is available upon request.

Skills

Soft Skills: Collaboration, Leadership, Learning From Feedback, Time Management, Adaptability, Critical Thinking, Initiative, Empathy.

Languages: Java, JavaScript & TypeScript, Python, React (JSX), C, Prolog, SQL.

Technologies: Spring Boot, React, MySQL, MariaDB, SQLite, JavaFX, HTML, CSS, Material UI, Microsoft Azure, Thymeleaf, JUnit, Cucumber.

Work Experience

Z Energy, Taradale, Havelock North, Karamu — *CSR*

2022 - 2024

I worked as a customer service representative over the 22/23 and 23/24 summer breaks.

Gourmet Blueberries, Hastings — *Picker*

2019 - 2021

I worked for gourmet blueberries as a picker for three summer breaks while at high school.

Alto, Hastings — *Padding Room Temp Staff*

2019 - 2021w

I worked in the padding room for multiple short stints to help with large workloads.

Awards and Involvement

- 1st XI Cricket (Best Batsman Award)
- Academic Committee Member
- Peer Tutor
- Member of Hastings and Harewood Golf Clubs
- 1st XI Football

References

Tania Franklin

Site Leader - Z Energy Taradale

027 625 8318

Hamish Waddington

Director - Eastern Energy Services

027 350 5096