

## PROJECTS

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### Mars Rover Simulator

2025

Collaborated in a 7-member agile team to develop an interactive Mars rover simulator (pygame) integrating NASA's HRSC MOLA dataset for realistic terrain modeling. Designed and implemented a tab-based project management interface, modular pathfinding algorithms (A, BFS, DFS), and persistent data storage with SQLite. Followed the full software engineering lifecycle—writing specification and design documents, applying version control, and streamlining workflows.

*Tools used:* Python, pygame, SQLite

### Anime Tracker iOS App

2025

Built an iOS anime tracking app in SwiftUI with search, discovery, watchlists, and local storage. Integrated Jikan REST APIs for real-time data, async networking, JSON parsing, error handling, and infinite scrolling. Designed dynamic UI with image caching (Kingfisher, AsyncImage), applied MVVM + Codable for clean, scalable code, and deployed/tested on iPhone via Xcode and Apple Developer tools.

*Tools used:* Swift, SwiftUI, MVVM, Jikan REST API, Xcode

### Software Validation of Rest API 'todo list manager'

2023

Validated a REST API with unit, story, and performance tests using JUnit + Cucumber, uncovering undocumented behaviors. Defined user stories in Gherkin and assessed performance with static (SonarQube) and dynamic (Java ManagementFactory) analysis.

*Tools used:* Java, JUnit, Cucumber, Git, SonarQube, Postman

### Web-based Board Game App

2025

Developed an interactive web app featuring Checkers and Konane, playable in local 1v1 or AI modes. Implemented an AI opponent using Minimax with alpha-beta pruning and multiple difficulty levels. Designed scalable boards and responsive UI with Tailwind CSS.

*Tools used:* React, TypeScript, Vite, Tailwind, Canvas/SVG

### Personal Watchlist Website

2024

Built a full-stack watchlist app with CRUD, show recommendations, responsive Bootstrap frontend, dynamic EJS rendering, and PostgreSQL-backed user data.

*Tools used:* JavaScript, PostgreSQL, Bootstrap, Express.js, Node.js

### Sticker Showcase Website

2025

Built a responsive React frontend with dynamic rendering of sticker collections using functional components and props, deployed via Netlify.

*Tools used:* JavaScript, React, HTML, CSS, Netlify

## SKILLS

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**Programming Languages:** Python, Java, Swift

**Web Technologies:** JavaScript, Typescript, HTML, CSS, SQL, Tailwind, Vite

**Frameworks:** Express.js, Node.js, React, Bootstrap

**Libraries & APIs:** Pandas, BeautifulSoup, JSON, Axios

**Dev Tools:** GitHub, Git, Azure DevOps, Docker, Visual Studio Code, PostgreSQL, Xcode, Postman, Unix

**Testing:** JUnit, unittest, Cucumber

**Languages:** English, French (fluent)

## EDUCATION

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McGill University, Montreal, QC, Canada

B. Sc. Software Engineering

3.71/4.00 (CGPA)

Sep 2021- Apr 2025