

# NICHOLAS (NICO) CARLIER

## FULL STACK SOFTWARE ENGINEER

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**TECHNICAL SKILLS** • Ruby • Ruby on Rails • RSpec • JavaScript • jQuery • React • Redux • SQL • Git • HTML5 • CSS3 • MongoDB • Express • Node • AWS S3 • Webpack • PostgreSQL • jBuilder • AJAX • OpenAI API • Google Maps API

## PROJECTS

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**REPS 'N' RECIPES** | [Github](#) | [Live](#) | [Demo](#)     *MongoDB • Express • React • Node • Redux • AWS S3 • Heroku • Webpack*

*A weight-lifting progress and nutrition tracking & recording web app that allows users to make and visualise progress*

- Engineered backend architecture using Express.js, for lightweight and performance-optimised features and MongoDB selected for schema-less data model— diverse and evolving user fitness metrics.
- Utilised React.js for the frontend development, chosen for its virtual DOM and reusable components.
- Implemented Redux for global state management, facilitating real-time meal and workout data sync across multiple components, reducing unnecessary API calls and enhancing performance.
- Integrated the Spoonacular API to provide dynamic meal tracking, selected for its comprehensive food database, which aligned with the application's flexible MongoDB schema.
- Used session storage and React hooks to persist workout and timer data across page refreshes, enhancing UX.
- Stored exercise GIFs in AWS S3 for high availability and faster load times, improving UX.
- Utilised Chart.js for real-time analytics visualisation, chosen for its lightweight footprint and high customizability, enabling users to gain actionable insights into their performance and dietary habits.

**FAIRBNB** | [Github](#) | [Live](#) | [Demo](#)     *Rails • React • Redux • AWS S3 • PostgreSQL • jBuilder • AWS S3 • Heroku • Webpack*

*A single page Airbnb clone where users can search for, book listings, and leave reviews*

- Reduced needed PostgreSQL database tables by 25% and heavily DRYed up backend code by utilising a one-to-many polymorphic table on the database level.
- Created custom SQL queries and reduced server load through the utilisation of Active Record associations to extract data from multiple tables in a single query
- Integrated Google Maps API to display listings to toggle between list and map mode for seamless user experience.
- Assembled a responsive user interface (UI) with React, integrated with Redux for global state management.
- Architected a RESTful API to facilitate CRUD operations, enabling users to interact with posts, comments, reactions, and friendships while maintaining high performance.
- Ensured user privacy through frontend and backend CSRF authentication measures and React Router

**TUBIFY** | [Github](#) | [Live](#) | [Demo](#)     *JavaScript • AJAX • OpenAI API • Youtube-API • Vanilla DOM*

*A fully interactive single page JavaScript web app where users can transform youtube videos to text through ChatGPT*

- Created a responsive app using vanilla dom to provide a seamless and intuitive UX for users
- Leveraged Youtube's API to fetch youtube transcripts and also OpenAI's API to post user prompts and transcripts related to the video, providing an intelligent response based on the video for users.

## EXPERIENCE

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**ASSOCIATE ENGINEER - PROJECTS** • *Aroa Biosurgery* • Auckland, New Zealand     **Nov 2022 – May 2023**

- Improved design of embroidery machine tension regulation system to reduce breakages of suture in production of biomedical devices and significantly reduce downtime in the production line.
- Successfully designed and delivered CAD and design documents and specifications for toggle press for industrial die cutting machines and decreased overall cost estimates by 400%

**PROCESS DEVELOPMENT ENGINEERING INTERN** • *Sunfed* • Auckland, New Zealand     **Jan 2022 – Mar 2022**

- Designed and implemented a conveyor joining device to prevent daily food waste in the production line.

## EDUCATION

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**APP ACADEMY** • Full Stack Web Development Course

**Completed 09/2023**

**UNIVERSITY OF AUCKLAND** • Bachelor of Mechanical Engineering (Honours)

**Completed 11/2022**