Nicholas (Nico) Carlier | Software Engineer

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SKILLS

Technical Skills: JavaScript, Ruby, Python, SQL, Git, React, Redux, Node, Express, Ruby on Rails, Typescript, jQuery, HTML5, CSS3, PostgreSQL, MongoDB, AWS S3, Webpack, RSpec, jBuilder, AJAX, OpenAi API, Google Maps API, Design Patterns, Sass, UX/UI

SOFTWARE ENGINEERING PROJECTS AND CONTRIBUTIONS

Fairbnb | Live - Single page Airbnb clone. Sign up, search, book, leave reviews, use map, calendar GitHub

- Reduced PostgreSQL database tables by 25% and heavily DRYed up backend through use of polymorphic tables on the database level
- Crafted custom SQL queries using Active Record associations to extract data from multiple tables in one query, reducing server load
- Integrated Google Maps API to display listings to toggle between list and map mode for seamless user experience
- Architected RESTful APIs to facilitate CRUD operations, allowing users to book, review and update bookings with high performance
- Fortified application with CSRF protection, restricting CRUD operations to authenticated users, bolstering data integrity and security

Reps 'N' Recipes | Live - Tool for tracking and visualising fitness and nutrition progress. GitHub

- Engineered backend architecture using Express.js and MongoDB - schema-less design accommodating diverse user fitness metrics
- Utilised React.js for the frontend development, chosen for its virtual DOM and reusable components
- Implemented Redux for global state management, reducing API calls allowing live meal and workout data sync across components
- Stored exercise GIFs in AWS S3 for high availability and faster load times, improving user experience (UX)
- Utilised Chart.js for real-time analytics visualisation, providing user insights into their performance and dietary habits

Apache Superset | Live - An open-source modern data exploration and visualisation platform GitHub

- Enhanced accessibility features, focusing on screen reader-friendly navigation of tables and data filtering

Blue Claim | Stanford Law X LLM Hackathon | Built in 24 hours to automate workers compensation forms

- Led development in a one-day hackathon to create a single-page app using GPT-4 API and OCR to write and export forms

Chess By Nico | Live - Single page chess app inspired by Chess.com to play chess with friends or against AI GitHub

- Developed a responsive, intuitive chess app with React.js, featuring adaptive UI for all platforms and custom drag-and-drop mechanics
- Enhanced gameplay with websockets for real-time multiplayer and integrated Stockfish API for AI challenges, ensuring a seamless UX

Tubify | Live - Single page JavaScript app. Youtube url to text then customise with ChatGPT GitHub

- Leveraged Youtube's API to fetch youtube transcripts. Engineered prompts for OpenAI's API transform and format raw transcripts

WORK EXPERIENCE

Engineering Intern → Associate Systems Engineer | Aroa Biosurgery | Auckland, New Zealand 2022 – 2023

- Spearheaded the comprehensive redesign of a pneumatic toggle press, involving meticulous planning, detailed calculations, simulations, and CAD modelling. My leadership and problem solving allowed substantial cost reduction, slashing estimates from $80k to $20k NZD
- Collaboratively worked within an agile team to enhance the design of a tension regulation system, significantly reducing production breakages and downtime. This project showcased my ability to quickly adapt to complex problems and deliver efficient solutions

Process Development Engineering Intern | Sunfed | Auckland, New Zealand 2022

- Engineered and executed the development of a conveyor-joining device, preventing significant daily food waste in the production line. This role highlighted my capacity for innovative design and the implementation of practical solutions in a fast-paced environment.

EDUCATION

Full-Stack Software Engineering Bootcamp | App Academy | San Francisco, CA 2023

- 1000+ hours in intense development environment, daily pair programming, team projects, learning new technologies in tight deadlines

BEng. in Mechanical Engineering (Honours) | University of Auckland | Auckland, New Zealand 2020 – 2023

- Course-work: Engineering Computation and Software Development, Electronics and Computing, Multivariable Control Systems
- Projects: Removal of moving object from image (C), Fluid flow simulation (Matlab), Simulation of inverted pendulum (Matlab)