Vincentius Roger K.

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EDUCATION

Singapore University of Technology and Design (SUTD)
Singapore

Bachelor of Engineering in Computer Science and Design
Sep 2021 – May 2025

- CGPA: 4.96/5.00
- Awards: ASEAN UG Scholarship, Honours List 2021/2022, Honours List 2022/2023

The University of British Columbia (UBC)
Vancouver, Canada

Exchange Program
September 2023 - December 2023

- Semester GPA: 3.93/4
- Awards: Canada-Seed ASEAN Scholarship, $10,200 in stipend.
- Courses: Applied Machine Leaning, Machine Learning and Data Mining, Networks, Cybersecurity

EXPERIENCE

Full-stack Developer Intern (Management Associate Program)
May 2024 – August 2024

Singtel / Singapore Telecommunications
Singapore

- Pioneered "common-baseline", a reusable module for GenAI apps, distributed in npm and pip package.
  - ∗ Architected a versatile GenAI package suite (pip & npm) to standardize 10+ APIs and enforce type-safety to 30+ functions, simplifying installation, updates, and data schema consistency across 4 AI applications.
  - ∗ Engineered a scalable full-stack architecture using Next.js and Python, allowing migration from a centralized WebSocket approach (h2o.ai wave framework) to support 20x more concurrent users and reduce server crashes by 80%.
  - ∗ Developed a thread-safe, queue-based message passing system in FastAPI to support non-async library, enabling concurrent WebSocket communication and increasing performance by 10x.
  - ∗ Created an automated testing system using Selenium, saving developers 100+ hours per month by automating the testing and reporting process to collect KPI data (delay, LLM latency).
- Tech Stack: Multi-threading, Python Async, Python Event Loop, WebSocket, FastAPI, Typescript, Next.js/React.js, TailwindCSS, Azure OpenShift Container, Selenium, Bamboo CI/CD.

Full-stack Developer Intern
Jan 2024 – April 2024

Terrascope
Singapore

- Collaborated in building Terrascope PCF, an AI-powered platform for companies to calculate, analyze, and optimize product carbon footprints across their product range. *Link to Product*
- Developed "nested dropdown with autocomplete" reusable component, contributing to Terrascope Design Library System (DLS) to standardize front-end components across 5+ products using Storybook.js.
- Integrated localization to support multiple languages for the PCF dashboard, allowing users to switch languages with a single click.
- Project Development SPACE Metrics
  - ∗ Created a data pipeline integrating Linear and GitHub PR data for company development metrics (PR lifecycle time, feature ticket size, developer productivity).
  - ∗ Maintained data freshness and efficiency by scheduling the CRON function to run daily using AWS Lambda and AWS CloudWatch, with the database stored in AWS Redshift.
  - ∗ Designed & built a UI dashboard for data visualization, enabling C-suite executives to conduct SPACE analysis 50% faster, significantly improving observability of technical challenges.
  - ∗ Overall, reduced manual data processing time by 90% and saved 90% of the cost compared to using a third-party service.
- Tech Stack: Storybook, Express.js, Dependency Injection w/ InversifyJS, SOLID Methodology, React.js, Redux State Management, Material UI, CRON function, AWS Lambda, AWS CloudWatch, AWS RedShift.

Front-end Developer Intern
May 2023 – August 2023

Datature
Singapore

- Built a platform enabling users to assign images to single labels using mouse clicks and hotkeys, featuring a visually appealing vignette effect for label display. *Link to datature's blog*

- Created a multi-step form interface for configuring external bucket (S3, GCP, Azure) connections, streamlining asset synchronization with the Datature platform.
- Enhanced developer experience (DX) by refactoring the user behavior tracking script into a standardized & reusable module with custom React hooks support.
- Developed confusion matrix data visualization for observing model performance after training, increasing observability for users. *Link to datature's blog*
- Refactored 10+ react class-based components to functional-based components, creating a more modular codebase with full React hooks compatibility.
- Developed an automation script to convert 700+ inline CSS styles to Tailwind CSS, enhancing developer experience and code scalability while reducing migration time by 10x.
- Tech Stack: React.js, Next.js Pages Router, BlueprintJS, Nivo, Mixpanel CDP, Google Compute Engine, S3 and GCP Bucket, Github Actions & SSH.

PROJECTS

UImagine.io | *Link to Live App* | *Link to ProductHunt*   Sep 2023 - Present
- An application that transforms plaintext ideas into design and code within seconds using generative AI (e.g., "A user interface for a hotel booking application").
- Engineered an AST manipulation algorithm using Babel.js to refine LLM-generated front-end code, reducing compilation errors by 80% and enhancing UI design generation quality.
- Collaboratively developed a dynamic bundling workflow with Vite, Rollup, and Node.js, enabling support for various design libraries (e.g., Ant Design, Tailwind CSS) and generating a unified index.html file with React and a screenshot preview.
- Engineered a custom iframe-parent communication system, allowing users to precisely target & edit specific UI components in isolated iframe previews.
- Reduced latency for rendering previews by 60% by migrating the bundling process from Webpack to Vite.
- Currently serving 280 active users and generating 750 applications to date on our platform. Featured on ProductHunt with 133 upvotes. *Link to ProductHunt*
- Tech Stack: React.js, Next.js 14 App Router, Shadcn, TailwindCSS, Drizzle ORM, Stripe, Babel.js, AST Manipulation, Async Workflow, Vite, Webpack, Redux.js, Vercel CI/CD.

OneLLM.co | *Link to Live App*   Feb 2024 - Present
- End-to-end no code platform that simplifies the LLM fine-tuning process.
- Created a dataset builder platform that supports hotkey shortcuts, increasing the speed of writing dialogue (user, assistant) data by 50% compared to using Excel/VS Code/other text editor.
- Reduced LLM fine-tuning time by 80%, optimizing dataset building process and eliminating the need for coding painful integration script with third-party providers.
- Built an API interceptor to allow users to track and log their API calls to OpenAI/Anthropic/Replicate and providing a feature to import these logs for future dataset training.
- Built a dashboard to visualize LLM usage trends and costs based on the recorded logs data, increasing observability for any AI projects.
- Currently serving 70 active users. Used this project to accelerate UImagine.io's LLM iteration.
- Tech Stack: React.js, Next.js 14 App Router, Redux.js, TailwindCSS, Supabase, OpenAI.

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Go, Java, Ruby, Python, C/C++, SQL (Postgres), NoSQL, ORM, HTML5/CSS3
Frameworks: Next.js 14 App/Pages Router, React.js, Angular, Node.js, FastAPI, Flask, Ruby on Rails, Express
Libraries: TailwindCSS, Shadcn, Material-UI, Ant Design, Storybook, Babel.js, AST Manipulation, Jest, Cucumber
Developer Tools: Git/Version Control, Docker, Google Cloud Platform, AWS, Azure, JIRA, Linear
Methodologies: Agile, Waterfall, Test-Driven Development (TDD), SOLID, Server-side Rendering, RESTful API, Microservice, User-centric Product Design (UI/UX).