

# JOHN MICHAEL SAN DIEGO

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<https://github.com/jmsandiego0>

## EDUCATION

### National University of Singapore

Aug 2022 - Present

Bachelor of Computing in Computer Science

- Expected Date of Graduation: Dec 2025

### Ngee Ann Polytechnic

Apr 2017 - Mar 2020

Diploma in Information Technology

- Cumulative GPA of 3.97
- Top 3 and 2 overall in Years 1 and 2, respectively
- Director's list for 3 consecutive years
- Accepted into the Early Admission Exercise Programme

## SKILLS

- JavaScript, TypeScript, Java, Golang, Dart, Python
- React.js, Next.js, Flutter, Vue.js
- HTML, CSS, Semantic UI, Material UI, Bootstrap, Tailwind CSS, ShadCN, Zod, Redux, Zustand, ReactFlow
- Node.js, NestJS, Go Gin Web Framework, Supabase, Firebase, Databases (SQL, NoSQL), ZeroMQ, Redis

## WORK EXPERIENCE

### Continental Automotive Pte Ltd (Singapore), Software Engineer Intern

Jan 2025 - Aug 2025

- Built a Driver Monitoring System (DMS) feature using Near-Infrared (NIR) sensors to monitor driver vital signs in real time
- Implemented a Python-based backend worker that listens to NIR camera data via ZeroMQ (ZMQ), extracts blood-flow information using transdermal optical imaging (TOI), and uploads it to a cloud-based system, utilising coroutines for efficient asynchronous data processing
- Developed a Flutter-based frontend application that receives processed heart rate data from the backend, displays real-time vital signs with alerts, and animations for better driver awareness
- Designed and developed a scalable, maintainable frontend for an internal organisation chart tool using React.js, ReactFlow, and TypeScript, applying best practices in structure, type safety, and performance to handle large hierarchical data
- Collaborated with backend team to design and manage new endpoints using .NET 8, ensuring efficient data exchange to meet evolving feature requirements

### Beeware Pte Ltd (Singapore), Contract Software Engineer

Nov 2024 - Jan 2025

- Developed an event management application for Kanpai Group Singapore, streamlining branch event coordination and winner notifications through an integrated email scheduling feature
- Engineered a scalable solution using TypeScript, Next.js, BullMQ, and Firestore, ensuring high performance and reliability
- Designed a user-friendly interface in Figma by applying advanced UI/UX principles—including grid systems and usability heuristics—to enhance the overall participant experience

### Koios Pte Ltd (Singapore), Front End Engineer Intern

Jan 2022 - Jun 2022

- Developed a tuition centre management application (MVP); designed and implemented front-end application using React.js, Redux Tool-kit, and Material-UI
- Experienced SCRUM software development methodology; assisted in research phase of application's UI/UX

### Red Dot Payment Pte Ltd (Singapore), Software Engineer Intern

Mar 2019 - Aug 2019

- Conducted competitive analysis, surveying 3 competitors in the industry, and gathered detailed requirements from stakeholders for the application's development
- Designed and helped with development of a hotel internet booking application (MVP) with Vue.js, Semantic-UI and Node.js (RESTful); integrated company's micro-service API such as payment gateway
- Learned basic serverless architecture with AWS such as API Gateway, DynamoDB and Lambda Functions; the team also incorporated SCRUM methodology involving stand-up meetings and sprints

## PROJECTS

### **Peerprep, Software Engineer, UI/UX Designer**

**Sep 2024**

Link: <https://github.com/jmsandiegoo/Peerprep>

- Collaborated in a team of four to develop a full-stack interview preparation platform side project inspired by LeetCode, enabling users to match and solve coding challenges together
- Implemented a real-time collaborative coding editor with shared cursor presence, a shared whiteboard, and chat functionality for seamless user interaction
- Developed the backend using a micro-service architecture in NestJS with RPC communication between services, containerised with Docker for a consistent development environment and future deployment
- Built the platform using Next.js, NestJS, Redis, ShadCN, MongoDB, Docker and Zod for type validation

### **TikBlog (Finalist in Tiktok Hackathon 2023), Software Engineer**

**Sep 2023**

Link: <https://github.com/rickkoh/tiktok-hackathon-23>

- Collaborated in a team of two to ideate and build a blog feature on top of TikTok reels, enhancing the application's social commerce; achieved top 12 out of 120+ submissions
- Leveraged Next.js, Supabase and TypeScript to construct the prototype; learned React's Component Registry pattern to enable dynamic and flexible UI

### **Launchlab NUS, Lead Software Engineer; UI/UX Designer**

**May 2023**

Link: [https://github.com/jmsandiegoo/launchlab\\_nus\\_app](https://github.com/jmsandiegoo/launchlab_nus_app)

- Led a two member team to develop a hybrid mobile application helping NUS students to find team-mates for modules, hackathons or even startups
- Learned Flutter, Supabase, PostgreSQL Functions and Unit Testing within 3 weeks to create the application
- Implemented clean code architecture principles within the project and applied object-oriented programming (OOP) concepts like polymorphism to ensure a well-organized and maintainable codebase
- Created the UI/UX of the application in Figma incorporating key design principles, including colour theory

### **MetaGym Web Forum, Solo Software Engineer; UI/UX Designer**

**Nov 2022**

Link: [https://github.com/jmsandiegoo/metagym\\_web\\_forum\\_frontend](https://github.com/jmsandiegoo/metagym_web_forum_frontend),  
[https://github.com/jmsandiegoo/metagym\\_web\\_forum\\_backend](https://github.com/jmsandiegoo/metagym_web_forum_backend)

- Built a full-stack single-page application (SPA) side project serving as a discussion medium for fitness enthusiasts; utilised React.js with Redux, Typescript, Material-UI for the frontend, Go Gin Framework for the backend and PostgreSQL to manage the data; the application also incorporates a JWT authentication mechanism

## CO-CURRICULAR ACTIVITIES

### **NUS Google Student Developer Club, Internal Team Front End Engineer**

**Apr 2024 - Present**

- Contributing to the club's internal team in developing an application tailored for NUS students
- Currently building a platform that fosters student collaboration by enabling them to form teams for hackathons, events and projects

### **Ngee Ann Polytechnic ICT Society, Committee Member**

**Apr 2017 - Mar 2020**

- Managed the school's empowerment camp and led a team of 5 - 7 members
- Trained the elderly on how to use modern technologies through the school's silver tech program
- Assumed a leadership role in overseeing the comprehensive planning and execution of school camp event games for a group of ~100 attendees