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EDUCATION

Nanyang Technological University (NTU)

Aug 2020 – Jun 2024

School of Electrical and Electronic Engineering

• **Bachelor of Engineering (Information Engineering and Media)**

• **Honours (Merit)**

- Relevant Modules: (1) Intro to Design (2) Web Application Design (3) AI and Data Mining (4) Data Structures and Algorithms (5) Software Engineering

WORK EXPERIENCE

NCS, *Full Stack Developer*

Sept 2024 – Present

- Integrated **TanStack Query** for efficient API state management and seamless CRUD operations.
- Developed and optimised front-end features using **React**, **TypeScript**, and the **MVVM** architecture, enhancing application performance and maintainability.
- Customised and abstracted **Ant Design** components into scalable, generic modules, documented in Storybook for consistent reuse across projects.
- Wrote **unit and integration tests using Jest and React Testing Library**, increasing component test coverage and reducing regression bugs during new feature rollouts.
- Collaborated within an **Agile** environment, actively participating in sprint planning, code reviews, and CI/CD pipeline improvements.
- Ensured smooth data communication by designing RESTful APIs with **Java** and **Spring Boot**.

Singapore Press Holdings (SPH), *Data Visualisation Developer*

Mar 2024 – Jul 2024

- Designed and implemented interactive 3D graphics and models using Three.js and Threlte, significantly enhancing narrative visualisation to improve user engagement. This approach led to a 30% increase in user interaction and a 25% rise in session duration on the storytelling platform.
- Expertly utilised Adobe Illustrator to create compelling graphics and edit images, boosting the visual appeal of content. These enhancements contributed to a 20% increase in viewer retention, expanding the stories' reach and impact.

PenguinSmart Inc. (Taiwan), *Full Stack Developer*

Jan 2023 – Jul 2023

- Spearheaded the design and implementation of innovative interfaces for the company's web application, seamlessly integrating with the backend to showcase dynamic data by leveraging latest technologies such as React and GraphQL, resulting in increase in usage by 200%.
- Led the redesign initiative, utilising Figma for prototyping and refining the user interface. Implemented strategic improvements to the website's user flow, resulting in a more intuitive and engaging platform, increasing user traffic by 60%.

ACADEMIC & MODULE PROJECTS / PERSONAL PROJECT ACCOMPLISHMENT

Self-Directed Project: ***Eh Messenger - Messaging App (Full Stack Project)***

Dec 2024 – Present

- Designed and developed a comprehensive messaging application using Figma, creating reusable components and a design system to ensure a consistent and efficient design process.
- Implemented core functionalities with React and Firebase, including profile customisation, theme changes, and friend search features, enhancing the app's user experience and interactivity.
- Focused on creating a clean and sleek UI for intuitive navigation, resulting in improved user engagement and satisfaction.

Final Year Project: **ExamPulse - Secure Online Exam Monitoring System (Full Stack Project)** Aug 2023 - April 2024

- Designed and developed a full stack web application for secure online examinations, streamlining admin workflows and enhancing academic integrity across institutions.
- Engineered the admin-facing system using **React** and **Styled Components**, implementing modular components for consistent and scalable UI.
- Architected the backend with **Firebase Firestore**, Authentication, and Storage to support real-time data operations, user account management, and secure media handling.
- Developed robust **CRUD functionalities** for managing users, modules, exams, and messaging features, enabling dynamic data updates across interfaces.
- Implemented secure login and session flow using Firebase Auth, and linked Firestore user collections with authentication UIDs to ensure data integrity.
- Designed the entire UI/UX on **Figma**, creating a cohesive design system, reusable components, and interactive high-fidelity prototypes for efficient frontend development.
- Deployed the platform on **Netlify** with version control and collaborative development managed via **Git** and **Agile** methodologies.

Self-Directed Project: **Joshua's Planet: Pottery Shop (Full Stack Project)** Dec 2023 – Feb 2024

- Conceptualised and designed the website interface on Figma, harmonising modern aesthetics with thematic elements for a welcoming user experience.
- Strategically devised and implemented a robust database schema, utilizing Firebase for seamless data management and synchronisation across the platform
- Engineered a responsive web application with React, prioritising clear user navigation and integrating real-time data updates to enhance user engagement and interaction.

NTU-IEM Module: **Intro to Design**

Aug 2023 – Nov 2023

Module Project: [Redesign of MRT Door Screen](#)

- Utilised design methodologies, including "How Might We?", "Jobs to be Done", and critical analysis of Design Principles, to assess and enhance the current design of MRT Door Screens.
- Conducted thorough user research to identify pain points and preferences, incorporating user feedback and heuristics into the redesign process.
- Developed and presented design prototypes, incorporating a clean and intuitive layout, resulting in a more user-friendly interface.

Self-Directed Project: [Taiwan Blog](#) (Full Stack Project)

Jan 2023 – Jul 2023

- Implemented a robust content management system (Hygraph) for backend infrastructure, leveraging internship-acquired skills, and connected it seamlessly to the frontend using React.
- Designed visually engaging layouts and original components in Figma, integrating captivating visual effects to enhance user experience and engagement.

NTU-IEM Module: **Artificial Intelligence and Data Mining**

Aug 2023 – Nov 2023

Module Project: **Train AI Model to Predict Outcomes Based on Dataset** (Group of 3)

- Led a collaborative effort within a team of three to develop and implement an advanced artificial intelligence model aimed at predicting outcomes from a comprehensive dataset.
- Successfully trained and fine-tuned the AI model, achieving an impressive prediction accuracy rate of 85%, surpassing the module's benchmark of 75%.

NTU-IEM Module: **Interface Design**

Aug 2022 – Nov 2022

Module Project: [Revamp of Internship Finding Platform, InPlace](#) (Team of 5 Members)

- Spearheaded a team of five members in conducting thorough user research, gathering extensive feedback to pinpoint and address pain points, employing analytical skills to distill insights and prioritise user needs effectively.
- Applied expertise in information architecture and visual design fundamentals to engineer a completely revamped, user-centric interface, elevating the overall user experience, resulting in enhanced usability and satisfaction for platform users.

LEADERSHIP / CO-CURRICULAR ACTIVITIES

NTU-EEE Club, ***Director*** (Student Development)

Aug 2021 – Aug 2022

- Collate feedback from students pertaining to course curriculum upon modules completion.
- Compile essential supporting materials for students' reference prior examination

NTU-Hall 5, ***Director*** (Quintessential Productions)

Aug 2021 – Mar 2022

- Assumed role as **In-Charge** of writing script for live stage performance.
- Led 10 team members during production phase to prepare performance.
- Handled logistics and acquisitions of costumes for cast members.

NTU EEE Efinity, ***Group Leader*** (Freshman Orientation Camp 2021)

- Led group of freshmen through 3-Day Virtual Orientation Camp with games and talks facilitation.
- Clarified doubts from freshmen about NTU or EEE/IEM degree program

SKILLS / HOBBIES

- **Languages:** Proficient in English, Chinese (Mandarin) and Malay
- **Software Programming:** Typescript, GraphQL, Ruby on Rails, React, Python, Visual Basic, C++ / C# / C Language, Java, HTML, CSS, Javascript, Assembly Language, Threejs, p5.js
- **Software Applications:** Figma, Wix, Unity, Visual Studio, Wondershare Filmora, Aesprite, Da Vinci Resolve, Jupyter Notebook, Adobe Suite (Illustrator, XD), Microsoft Office 2022, Autodesk Inventor Professional 2020, CircleCI, Netlify
- **License:** Class 3A Driving License
- **Hobbies:** Cooking, Playing Musical Instruments (Piano), Sports (Badminton, Swimming), Gaming
- Github: <https://github.com/GnawedLeaf>
- Design Portfolio: <https://drive.google.com/drive/folders/1tG2tylKMUHT-qocX96Qf1K0Xft4CUv9c?usp=sharing>