

AARON ASHWIN RAJOO

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TECHNICAL SKILLS

AWS, Confluence, Jira, C, C++, HTML, Java, JavaScript, Next.js, NodeJS, Python, React

WORK EXPERIENCE

FULL STACK ENGINEER INTERN, CINCH SG

May 2023 – Jul 2023

- Leveraged Next.js to build Frontend UI tailored for finance team to track orders and monitor business performance. Collaborated with stakeholders to understand and ensured the web page met organizational needs.
- Engineered backend infrastructure utilizing Python and FastAPI to construct APIs for retrieving product data. Executed ETL by extracting from SQL databases, transforming with optimized filters, and loading to specific endpoints for data integrity.
- Utilized Jira extensively to manage and track project tasks, user stories, and sprints, ensuring efficient workflow and task prioritization.

MACHINE LEARNING INTERN, MAKINO ASIA GROUP

May 2022 – Jul 2022

- Trained a Bidirectional Gated Recurrent Unit (BGRU) Neural Network model to predict final surface conditions and operation time for the Wire EDM (WEDM) machines.
- Pre-processed data with various techniques including data cleaning, normalization, one-hot encoding, data inversion with pandas and NumPy, and formatted data to 3D Tensor inputs for ML.

ELECTRONIC SYSTEMS INTERN, DEFENSE SCIENCE ORGANISATION (DSO)

Nov 2023 – Dec 2023

Developed a prototype of an Alert System that detects anomaly and alert a hierarchy of subscribed users through TCP and Telegram's Bot API.

PROJECT EXPERIENCE

HANDS-FREE VERBAL LOCK, NUS ([View project](#)) – ([GitHub](#))

Nov 2023 – Dec 2023

- Developed an IoT secure verbal lock through cloud computing, object detection and audio classification.
- Images captured from a microcontroller were processed and sent to AWS IoT via MQTT. Deep learning was leveraged through AWS Rekognition and Lambda for object detection.
- Audio recordings through an I2S Microphone were captured and wav files were processed and spliced before utilizing a HuBERT model for audio classification.

E-COMMERCE WEBSITE, ([View project](#)) – ([GitHub](#))

Aug 2022 – Apr 2023

Designed an E-Commerce bookstore with React and JavaScript to dynamically fetch data and allow users to browse, sort and cart items. A pleasant user experience is also attained through routing, hooks and deploying skeleton loading states between pages.

CERVICAL LANDMARK DETECTOR, NUS & NUH ([View project](#)) – ([GitHub](#))

Aug 2022 – Apr 2023

- Developed an AI-Computer Vision solution, through machine learning, to automate and enhance first-level diagnosis of airway difficulty in patients.
- Implemented semi-supervised learning on a set of 2,000 labelled images - automatically pseudo-labelling more than 20,000 unlabeled images - to iteratively retrain CNN models. This achieved a final predictive accuracy of 3% for relevant neck features.

EDUCATION

Aug 2020 – Nov 2023

National University of Singapore

Undergraduate in **Mechanical Engineering**,
Minor in **Computer Science**

Grade: 4.13/5.00 **Distinction Honours**

Apr 2015 – May 2018

Ngee Ann Polytechnic

Diploma in **Engineering Science**
GPA: 3.93/4.00