

Ramanathan Kumarappan

+65 86832619 | ramanathan.k@u.nus.edu | [linkedin.com/in/kmramanathan](https://www.linkedin.com/in/kmramanathan) | github.com/Ramanathan0908
ramanathan.space

EDUCATION

National University of Singapore

Singapore

Bachelor of Computing in Computer Science (First Class Honours)

Expected Jul 2025

- Relevant Coursework: Networks, Database Systems, Software Engineering, Operating Systems, Data Structures and Algorithms, Big Data Systems, Optimization Algorithms

EXPERIENCE

Software Engineer Intern

May 2023 – Oct 2023

FabricaAi

Singapore

- Engineered and streamlined data processing pipeline utilizing NumPy to efficiently handle data streams from Lidar and camera sources to generate inputs for Reinforcement Learning Model.
- Restructured embedded systems using C++ to interface with various sensors and actuators (e.g., load cells and motors) through OrangePi, Arduino, and Roboclaw; optimized performance and reduced response time by 25%
- Developed and deployed Dockerized ROS2 nodes on a Single Board Computer (SBC) integrated with a robot. Enabled seamless collection and automatic uploading of logs to Google Drive using Google Drive APIs, reducing troubleshooting time by 20%

Front-end Software Engineer Intern

May 2022 – July 2022

Kabam Robotics

Singapore

- Revamped a front-end web page with React, Redux, and Material-UI to enhance monitoring capabilities of a diverse fleet of robots. Provided real-time status updates, resulting in a 20% increase in customer satisfaction.
- Refactored and optimized code for form handling using Formik and Yup, resulting in a highly efficient and scalable solution. Significantly enhanced user experience and reduced form submission errors.
- Created a comprehensive unit testing strategy using tools such as Jest and Enzyme, achieving over 90% code coverage. This effort enhanced the reliability, stability, and maintainability of the codebase.

Software Engineer Intern

Jan 2021 – July 2021

Kabam Robotics

Singapore

- Developed and integrated an ultrasonic range detection sub-system into a larger robotic project, leveraging Docker, Robot Operating System (ROS), and C++. Ensured seamless functionality and accelerated the performance of the system.
- Improved the reliability and robustness of serial communication by implementing intelligent encoding and decoding algorithms for data packets, resulting in a 30% increase in overall performance.

PROJECTS

Text Summarizer Web Application | *React, Flask, Firebase, Hugging Face*

May 2022 – Aug 2022

- Led a two-person team in the successful end-to-end development of the Text Summarizer web application.
- Leveraged natural language processing capabilities from Hugging Face to provide users with accurate and concise text summaries.
- Implemented Firebase's authentication and storage features to ensure secure storage and retrieval of user-generated summaries.

Task Tracker Web Application | *Typescript, React, Ruby on Rails, PostgreSQL*

Dec 2021

- Spearheaded Task Tracker, a robust full-stack web application utilizing Ruby on Rails as the back-end framework, PostgreSQL as the database, and serving a REST API to a React front-end.
- Empowered users to efficiently store, manage, and view tasks, resulting in improved productivity and task organization.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL, JavaScript/Typescript, HTML, CSS, R, Ruby

Frameworks: React, Flask, Ruby on Rails, ROS/ROS2

Developer Tools: Git, Docker, Google Cloud Platform, CMake, PlatformIO, Hadoop, Spark

Libraries: PyTorch, Pandas, NumPy, Matplotlib, TensorFlow, Redux, PySpark