# LEONG KO RYAN JASPER

+65 9231 4524 • e1122193@u.nus.edu • linkedin.com/in/ryanjasperkoleong • ryryry-3302.github.io/My-Portfolio/

## EDUCATION

**NATIONAL UNIVERSITY OF SINGAPORE** **Aug 2023 – Jun 2026**
Bachelor of Engineering (Honours) in Computer Engineering
- Engineering Scholars Programme
- GPA: 4.54

**NANYANG JUNIOR COLLEGE** **Jan 2019 – Nov 2020**
**A' Levels**
- AAA/A (90 Rank Point)
- Distinction in H3 Economics

## WORK EXPERIENCE

**A*STAR National Metrology Centre (NMC)** **May 2024 – Present**
Field-Programmable Gate Array (FPGA) Intern
- Engineered a sophisticated frequency synthesiser module to achieve precise 1PPS synchronisation with Caesium Atomic Clocks utilising the advanced capabilities of the FPGA Tang Nano 20k, achieving significant cost savings by using FPGA technology instead of atomic clocks.
- Executed comprehensive testing and data collection using the CNT-90XL Microwave counter to meticulously analyse and graph the project's Overlapping Allan Deviation, upholding strict timing standards.
- Conducted 7 in-depth literature reviews and critically assessed the strengths and limitations of existing methodologies, enhancing time synchronising methods.

**HolyWally** (White Label Digital Wallet Platform Startup) **Apr 2023 – June 2023**
Product Intern
- Developed robust internal tools leveraging Superblocks for seamless integration with PostgreSQL DB and the HolyWally Backend API, empowering the Product team with advanced testing capabilities.
- Wrote more than 30 Jira tickets with precise technical requirements and acceptance criteria, streamlining task assignment for developers to expedite feature implementation and bug resolution.
- Conducted comprehensive QA testing for both the web portal and mobile application, designing API calls using Postman to interface with third-party APIs, streamlining the User Application testing process and allowing the QA team to allocate more time towards evaluating core features.
- Revamped and authored 10 pivotal articles in the company's documentation using Docusaurus and Azure DevOps, enhancing knowledge sharing and operational efficiency.

**Singapore Armed Forces** **Jan 2021 – Nov 2022**
Combat Medic
- Initiated and designed an automated spreadsheet to systematically track and notify when medical equipment is nearing expiry, reducing risks, increasing productivity, and facilitating timely actions via proactive alerts.
- Certified to administer PCR tests, IV treatments, vaccines, and perform venipuncture, ensuring comprehensive medical support capabilities.
- Attained certification in Basic Cardiac Life Support with a Medic license conferred by the Justice Institute of British Columbia.

**Infineon Technologies** **Jul 2018 – Jul 2018**
Innovation Intern
- Led project integrating Hall Effect Sensors, Arduino, and Infineon's DAVE (C/C++ programming language) to evaluate and enhance applicability and intuitiveness of Infineon's proprietary programming language in developing joystick-controlled snake game, as entrusted by the Senior Director of Corporate Supply Chain.
- Delivered a compelling presentation on group findings and showcased the final prototype to the engineering team, demonstrating leadership and technical proficiency.
- Gained invaluable insights into innovative practices via observation and shadowing experiences with the Business Analytics Department and Engineering and Innovation team.

## PROJECTS AND COMPETITIONS

**NUS Summer Orbital Project – 'QuickSheet'** **May 2024 – Present**
- Developing a streamlined cheat sheet-making application using Electron and React to provide students with a faster and more efficient tool than bloated alternatives like Microsoft Word.
- Supports light-weight rich text editing on all platforms, granting every student access to a swift and feature-rich cheat maker without compatibility issues.
- Empowers students, particularly in STEM, with advanced features like custom code blocks and LaTeX equations using TipTap Editor, enhancing their academic workflow beyond traditional word processors.

**Video Editing Automation Project** **June 2023 – June 2023**
- Initiated and built a Python application to automate the insertion of custom intro and outro videos with precise tilting.
- Expedited productivity by generating output for over 100 titled videos in under 10 minutes.

**Harvard CS50x Final Project – 'RyNance'** **Mar 2022 – Mar 2022**

- Embarked on a solo project to pioneer a website empowering Singaporean youth with invaluable financial insights, featuring tools such as a Retirement Calculator, Budget Planner and Undergraduate Salary Comparison Tool.
- Integrated Flask Framework, Bootstrap, SQLite3, Python, JavaScript, CSS, and ChartJS to deliver a seamless user experience on the website.

**3rd Best Design, SST – SUTD Electric Vehicle Project (Team)** **Jan 2018 – Jan 2018**

- Devised a car model using AutoDesk Fusion 360, showcasing proficiency in 3D modelling and design.
- Contributed to the assembly and wiring of the chassis, demonstrating hands-on expertise in vehicle fabrication.
- Part of the SST – SUTD Big Discovery Camp Programme.

**1st Place, Infineon Chips@School Competition (Team)** **Aug 2017 – Aug 2017**

- Pioneered an innovative project to automate grey water recycling in HDBs using Arduino chips, revolutionising water conservation efforts through sensor-based water level detection in Singapore.
- Conceptualised, engineered, and assembled electronic components, demonstrating proficiency in drafting, wiring, and soldering techniques.
- Delivered a persuasive presentation detailing the design intricacies to the Infineon Engineering Team.
- Awarded an internship opportunity at Infineon Technologies, showcasing problem-solving prowess.

## AWARDS AND CERTIFICATES

- Engineering Scholars Programme (2023 – Present)
- Participant, NUS RightShip Hackathon (2024)
- 1st Place, Singapore Cancer Society Interschool Competition (2023)
- Finalist, Europe TimeTravels 'Make It Reel' Competition (2023)
- Distinction, Trinity College London Advanced Certificate Ensemble (2018)
- 1st Place, Infineon Chips@School Competition (2017)
- Honourable Mention, Singapore Junior Physics Olympiad (2017)
- EAGLES Award (2017)
- Australian National Chemistry Quiz (ANCQ) Award (2017)
- Book Prize in Science (2015)

## TECHNICAL SKILLS

- Programming Languages: C | C++ | JavaScript (React/ Electron)| SQL | Python (Flask/ Django)
- Microcontrollers and FPGAs: Arduino | Basys3 | Tang Nano 20k | Raspberry Pi
- Hardware Description Language: Verilog
- Technical: Microsoft Visual Studio Code| Microsoft Office Suite | Git/GitHub
- IT Skills: C/ C++, Verilog, Bare-metal Programming (Arduino), Python (Flask, Django), JavaScript, HTML(Bootstrap5), SQL (SQLite3, PostgreSQL), Git/GitHub

## VOLUNTEERING EXPERIENCE

**International Service-Learning Expedition – Laos, Luang Prabang** **May 2019 – Dec 2019**

Volunteer and Publicity In-Charge

- Built a water-filtration system to provide the locals with clean and portable water, addressing water contamination issues and health concerns like kidney stones through collaboration with a team of 25 students.
- Conducted English and hygiene lessons for underprivileged students, fostering cultural exchange between Laos and Singapore.
- Learnt sign language to facilitate communication with students from the Luang Prabang School of the Deaf and Mute.
- Demonstrated creativity and story-telling prowess through the design of an original advertisement video detailing the team's 2-week adventures in Laos, promoting and encouraging future batches of students to join the expedition.

**Citibank Youth for Causes for Single Mothers – 'Babes'** **June 2019 – Aug 2019**

Volunteer Busker (Electric Guitarist)

- Rehearsed diligently alongside my band to put up a captivating busking performance at Orchard Road.
- Successfully raised over $200 in donations for single mothers.

## HOBBIES AND INTERESTS

- Video game console emulation
- Sports: Cycling, football, basketball
- Music: Electric, acoustic, bass guitar, piano, drums