Ricky Vian KARTOLO

Mobile: +65 8678 8690
Email: rickyvian.k@u.nus.edu
Skype ID: ricky_vian
GitHub: https://github.com/rickyviank
Website: https://rickyviank.github.io

Personal Statement

Aspirations

It all started when I took up the courage to leave my hometown, Indonesia, for a scholarship opportunity in Singapore. Since then, I have the privilege to gradually discover my passion through my initiative. As I narrow down my search, I learnt that my interest is in the design and creation of meaningful product through the startup ecosystem. Specifically, I hope to build things that can help in creating a truly wireless future. I am specializing in wireless communication and RF technology and are experienced in embedded system design through my startup internship.

Currently, I see myself as going through the same tipping point where I advance to the next stage of my life to experience and discover new opportunities in San Francisco.

Lessons from Past Internships

During my undergraduate, I have the opportunity to intern at the Acoustic Research Laboratory (ARL) and an Internet-of-Things (IoT) startup called TransferFi. While both internships provide me with different experiences, they have taught me incredibly on how to be resourceful.

At ARL, I defined my research problem and little did I know that I would spend my next 8 months working on the same problem. Due to the novelty nature of research, the amount of resource available both online and offline are meagre. Hence, most insights need to be indirectly drawn from existing knowledge or experimental data.

Eventually, I shifted away from the research field as it felt too early for me to specialize in a topic of interest. Hence, I decided to intern at a startup company. At TransferFi, I was tasked with challenging projects and no mentor to guide me. I can understand that resources are limited in the startup settings, hence the solutions to most of my questions are mostly sourced from the web and forums. In addition to being resourceful, I have learnt how to wear multiple hats at the same time as human resource is scarce. Lastly, I honed my communication skill through liaising with our client when designing the appropriate system implementation.

Why Me?

My internship objective is to provide genuine value-add to your company while discovering new opportunity and honing new skills together with your company. Having done so many group projects, I have evolved to be a very good team player, while learning much about project planning. These values are reflected in many of my work, including projects that I have done over my internship. Testimonials from my mentors will be attached in Appendix A, but we all know that the best testimonial can be done through an interview.

Skill Sets & Proficiency

Programming	Proficient	Python
	Proficient	C
	Basic	C++
Hardware Design	Proficient	LabVIEW
	Intermediate	Verilog
	Intermediate	LTSpice Circuit design
Software-Defined Radio	Intermediate	GNU Radio companion
Computer Aided Design Software	Proficient	Autodesk Eagle
	Intermediate	Autodesk Fusion 360
Simulation Software	Intermediate	MATLAB
	Proficient	Waveforms
	Proficient	LabVIEW
Data Analytic	Proficient	NumPy, SciPy and Pandas
	Intermediate	Jupyter Notebook
	Proficient	Matplotlib and Bokeh Plot
Version Control	Intermediate	Git
Web	Proficient	HTML
	Intermediate	CSS
Server Management & Network	Basic	Server Setup/Maintenance
	Basic	Wireless Networking
Non-technical Skills	Intermediate	Project Management
	Proficient	Customer Relation

Work Experience

Mar 2019 - Present **TransferFi Private Limited (Pte Ltd)**

Embedded System Engineer

- FPGA implementation for digital control of phased-array antennas which result in significant increase of transmission efficiency of up to 300%.
- Nordic firmware development for Industrial IoT which dramatically reduces power consumption by 30%.
- ModbusTCP Implementation for a Programmable Logic Controller (PLC) requested by our client.

May 2018 - Feb 2019 **Acoustic Research Laboratory**

Undergraduate Researcher

- Researched on the spatial diversity of acoustic communication underwater up to 100m.

Past Projects

Mar 2019 - Present **Doppler Radar System Design**

- Built a 2.4 GHz Doppler radar transceiver to detect motion, by sourcing components such as oscillators, mixers, and amplifiers after careful signal power analysis, obtaining accurate test results.
- Modelled the expected doppler shifts for various motions using MATLAB to verify the data, resulting in better evaluation of the obtained test results.

May 2018 - Feb 2019 **Balloon Satellite Project**

- Led a team of 4 multi-disciplinary students to design and assembly a full-fledge balloon satellite targeted at gathering atmospheric conditions, that could be remotely controlled from the ground via RF signals.
- Utilized Arduino platform and integrated various sensor components with different protocols such as Serial UART, I2C, SPI, achieving overall system control.

Scholastic Achievements and Extracurricular Activities

Aug 2014 – Dec 2016 **Scholarship**
St. Joseph Institution Merit-Based Scholarship

May 2018 **IEEE Hackathon**
Third Place – Best Hack

Dec 2014 **International Spaghetti Competition**
International First Prize Winner

Dec 2017 - Dec 2018 **School Contributions**

- Corporate Relation Director for NUS Indonesian Musical Production
- Head of Public Relation for GreenT Movement in Tembusu College

Education

Aug 2017 - Present **National University of Singapore**
Bachelor of Engineering (Honors) in Electrical Engineering,
Double Major in Innovation and Design
(Course details in Appendix B)

Aug 2014 - Dec 2016 **St. Joseph Institute International**

- International Baccalaureate (IB) Subjects: Physics (A), Chemistry (A), Math (B), Business (A+), Chinese (A+), English (A)
- Singapore-Cambridge General Certificate of Education Advanced Level: Elementary-Math (A+), Advance-Math (A)

Language Proficiency

Spoken	English – fluent; Mandarin – fluent; Bahasa Indonesia – fluent
Written	English – competent; Chinese – competent; Bahasa Indonesia - competent

TRANSFERFI PTE. LTD.
WWW.TRANSFERFI.COM
ADDRESS: #01-53, 81 AYER RAJAH CRESCENT,
SINGAPORE 139967
PHONE: (+65) 91908109, 96589896
ACRA REG. NUMBER: 201728348W

To WHOM IT MAY CONCERN:

Recommendation Letter for Ricky Vian Kartolo

It is my pleasure to write this reference letter for Mr. Ricky Vian Kartolo. During his Internship with TransferFi Pte. Ltd., Ricky demonstrated a high level of engineering curiosity and a strong aptitude to practical problem-solving. Therefore, he could contribute to multiple projects including FPGA implementation for digital control of a phased array antenna, and firmware development for low-power Industrial Internet of thing (IIoT) applications.

Ricky is hard-working, diligent, and capable of running multiple tasks concurrently. He is always committed to the deadlines for his deliverables, which is only possible through rigorous planning and constructive collaboration with his colleagues. I am convinced that he will have a stellar Engineering career in future.

I would recommend Ricky without any hesitation. If you need any further information about him, please feel free to contact me.

Sincerely,

Mohammad Reza Vedady, Ph.D.
Chief Technology Officer
TransferFi Pte. Ltd., Singapore
E-mail: reza@transferfi.com
Phone: (+65) 91908109

Rolls-Royce

Rolls-Royce Singapore Pte Ltd
(Reg. No: 198500100-K)
1 Seletar Aerospace Crescent
Singapore 797565
Tel : (65) 6240 3333
Fax : (65) 6240 3537

To whom it may concern:

I am working with Ricky Vian Kartolo in 2019 on a collaboration project between the National University of Singapore and Rolls-Royce to explore the design of robots and other automated means of remotely monitoring the health of ship machinery and equipment.

In my experience so far, Ricky is very enthusiastic about both technology itself and how to develop commercial products from it. He is part of a team of four working on this topic and he has frequently taken the initiative to define the tasks of the team, agree them with his teammates and support them in executing their parts. He has contributed a lot of design ideas and he has even gone so far as to arrange workshops to help the mechanical engineers in the team better understand how to use the Arduino as a controller for the system. Furthermore, he has driven the work the team has done to prepare submissions for their design and business model into local technology competitions. As part of this, he has sought guidance from the wider industry by attending events and talking directly to ship operators, engineers and other such stakeholders. This is a level of initiative I have rarely seen from students in his position.

As a person, I find Ricky easy to relate to and willing to listen to advice while also having the drive to propose ideas and solutions of his own. He clearly has a lot of aspirations to make a career for himself in this industry and from what I can see he is well-equipped to do so.

I hope this recommendation will help you in assessing Ricky and I would be happy for you to contact me at gary.wilson5@rolls-royce.com if you need to know any more.

Yours faithfully,

Gary Wilson

Gary Wilson
Principal Technologist
26th August 2019

APPENDIX B

Degree: Bachelor of Engineering (Honors) in Electrical Engineering, Double Major in Innovation and Design
Cumulative Average Point: 4.02 / 5.00

CLUSTER	Course Description	Grades
Wireless Communication and RF Technology	Radar Theory and Techniques	A-
	Electromagnetics for Electrical Engineers	A-
	Introduction to RF and Microwave Systems & Circuits	In-progress
	Communication Systems	In-progress
	Computer Networks	In-progress
	Integrated System Lab	In-progress
	Signals and Systems	B+
Embedded System Design	Digital Design	A
	Microcontroller Programming and Interfacing	B+
	Exploratory Satellite Design	B+
Power Electronics and Circuit Analysis	Electronic Circuits	A-
	Introduction to Electrical Energy Systems	B+
Programming	Programming Methodology	S
Engineering	Engineering Principles and Practice I	S
	Engineering Principles and Practice II	A-
Mathematics	Differential Equations for Engineering	A-
	Engineering Calculus	B
	Analytical Methods in Electrical and Computer Engineering	B+
	Quantitative Reasoning	B+
	Linear Algebra for Engineering	D+
Liberal Arts Studies	Biomedicine and Singapore Society	B+
	Discourse, Citizenship, and Society	S
	Public Persona and Self-Presentations	S
	Time and Life	B+
	Junior Seminar: Social Innovation	CS
DCP Project #		In-progress

DCP Project is a one-year project conducted under iDP(Innovation and Design Program). It is a project consisting of 4 team member (3 mechanical engineering students, and myself). The Project is named ARMS (Autonomous Robotic Monitoring System) and it focuses on designing robotic monitoring system used for monitoring ship equipment such as steering gears, diesel engines, etc.

NUS Grading Scale:

A+ & A (5.0); A- (4.5); B+ (4.0); B (3.5); B- (3.0); C+ (2.5); C (2.0); D+ (1.5); D (1.0); F (0)

S = Satisfactory; U = Unsatisfactory

CS = Completed Satisfactorily; CU = Completed Unsatisfactorily

EXE = Exempted; IC = Incomplete; IP = In Progress; W = Withdrawn