



RITESH KUMAR

@rtshkmr
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SOFTWARE ENGINEER

BACHELOR OF COMPUTING (HONORS)
IN COMPUTER SCIENCE
& MINOR IN MANAGEMENT

PERSONAL STATEMENT

MY ORIGIN STORY

My story so far is one of **risk, luck, and the success of meritocratic systems** that Singapore prides itself in. Born in a coastal city in India to a Marine Officer father and a Chemist mother, my parents' efforts gifted me the opportunity of becoming a **naturalized Singaporean** at the age of 10. Thereafter, **the journey has been phenomenal** — education provided the open-mindedness to shape my own opinions and worldview, I had a side-hustle as an athlete and a coach for a period and, getting a spot at the Alma mater of Singapore's founding fathers gave my academic and career pursuits a sense of purpose and idealism. Now, as an undergrad, I am privileged to represent NUS Overseas Colleges (NOC) to **learn, grow, and contribute to meaningful startups in Toronto**, the city that believes that **Diversity is her Strength**.

MY STARTUP EXPERIENCE @ SG

My **first exposure to startups** was working under a sports management firm when I was 14. Over 5 years, I saw the complexities of sustaining a startup in Singapore, having culturally diverse clients, and operating in a niche market. My academic interests eventually drove me to Computer Science as a major and hence, the tech industry. My past year's experiences have given **unique viewpoints on how ideas materialize** — I contributed to the university's Advanced Robotics Centre and saw the benefits of R&D labs **partnering with prestigious entities** like Nvidia, interned at a mature MedTech consultancy startup where I **worked under startup founders**, and had **successful hackathons** where we sprinted through product ideation, development and pitching. The **power of friendship** has allowed me to closely follow the growth of local startups and be part of an upcoming cryptocurrency-based venture. These experiences have improved my skills in emerging areas of technology and inspired in me a growing respect for **entrepreneurs who center their startups around meaningful social contributions**.

WHAT I BRING TO THE TABLE

Flexibility is my foremost asset. Throughout the years I've worn **multiple hats**: Software Engineering (SWE) intern, research assistant, hockey coach, umpire, and player. The **variety of roles** has given a unique set of experiences with insightful cross-disciplinary skills and the flexibility of adapting to novel situations quickly. Interestingly, my life as a hockey coach has had the greatest impact on my skills in SWE. Doing well in the tech field is like that in Sport — the **trainability** of an individual and their **learning attitudes** have the biggest role in their growth. Coaching has gifted me with the insight on how to **teach respectfully** when I have more experience to share and how to **learn enthusiastically** otherwise. Toronto's cultural diversity will be **familiar territory** since I've had the **luxury of cultural exposure** in my journey so far. From training, learning from and teaching Nepali mercenaries and Dutch youth to being part of a biker group, the experience has been **wildly rewarding**.

MY INTERNSHIP OBJECTIVES

My **goals** for this year-long internship lie idealistically in the **impact that a company has on its community**. I'm looking forward to being **part of an exciting young startup** that has **clear goals** on how their product **value-adds to peoples' lives**. Furthermore, I look forward to having superiors whose experience can be good teachers and who would give the necessary **autonomy in doing difficult things** and learning from them.

In closing, I respect the challenges that come with the startup life, and it would be **a dream to be in a team of people who work tirelessly towards ideas they believe in**. Looking forward to a year of learning, immersing in Toronto culture and personal growth, I have full faith in finding a fitting firm. To quote the immortal words of the **late poet Tupac Shakur**, "**real realize real**".

[MY WORK EXPERIENCE]

May 21 - Aug 21 **AI Research Engineer in Healthcare**
QuantumSys Technologies Pte. Ltd.
Singapore

- Spearheaded a team of 3 to improve the quality of healthcare provided at Dialysis Clinics (~90 patients each)
- Pipe-lined Haemodialysis patient data into a Data Warehouse using Apache Camel
- Created multiple health visualization and real-time dialysis-monitoring dashboards using a ReactJS front-end supported by a GraphQL API layer built onto a SpringBoot back-end
- Deployed statistical models for forecasting patients' health test results

Jan 21 - May 21 **Research Assistant**
NUS English Language & Literature Dept.
Singapore

- Created Python scripts to improve manual verification of Parts of Speech (POS) tagging for the creation of Singlish Treebanks under Dr Zhiming Bao

Jul 20 - Jan 21 **Research Assistant**
NUS Biomedical Engineering Dept.
Singapore

- Value-added to existing open-source tools on Crease Pattern Generation and their Origami Simulations that utilized JavaScript-based vector graphics libraries (Dojo.gfx) with the aim of doing browser-based protein folding simulations under Dr Ren Hongliang

[MY PROJECTS]

Jul 21
Won 2nd Runner-Up Prize
Singapore

AWS BuildOn ASEAN Hackathon 2021

- Built a suite of AWS-centered solutions in a team of 5, to promote Green Consumerism within the Delivery Services Industry via an internal GreenCredit system — an emissions estimation API built on NodeJS, a Flutter-based mobile wallet to reinforce individual behavior, a POC to demonstrate business' workflow and a self-exploratory geospatial visualization website built on ReactJS and Deck.GL

May 20 - Jan 21 **Student Robotics Researcher**
NUS Advanced Robotics Center (ARC)
Singapore

- Created virtual simulations to augment segmentation training of Unmanned Autonomous Robots as part of a team of 7, using Blender and Unity3D along with Nvidia's Isaac SDK

Jan 21
NUS Advanced Robotics Center (ARC)
Singapore

HacknRoll Hackathon by NUS Hackers

- Engineered a Typing Game as a team of 4, with collaborative game rooms running on an Express server, communicating real-time via web-sockets wrapped with Socket.IO to a React front-end written in TypeScript on Docker

[MY TECHNICAL SKILLS]

Programming Languages

● ● ● ● ● ●

- JavaScript
- C++ 17
- Kotlin
- Bash
- Java
- Python3
- Ruby

Networking & Security

● ● ● ● ● ●

- Socket.io
- Basic Socket Programming
- Familiar with webapp pen-testing tools

Computer Graphics

● ● ● ● ● ●

- 3D Modelling via Blender, Unity3D
- Geospatial Visualizations via Deck.GL, WebGL

Cloud Computing

● ● ● ● ● ●

- AWS Amplify, Lambda
- AWS EC2, S3
- AWS Quantum Ledger Database
- Familiar with GCP

Full-Stack Development

● ● ● ● ● ●

- React, React Native
- Spring, SpringBoot
- Ruby on Rails
- NodeJS, Flask
- RESTful, GraphQL APIs
- Docker, Kubernetes

Databases & Enterprise Integration

● ● ● ● ● ●

- SQL
- Apache Camel
- JPA, Hibernate
- Apache Kafka

Robotics

● ● ● ● ● ●

- Robot Operating System (ROS)
- NVIDIA Isaac SDK

Other Development Platforms

● ● ● ● ● ●

- Desktop Applications via Java 11 and JavaFX
- Android Certified Application Developer Android v8 (Kotlin)

[COMMUNITY WORK]

May 21 - Jul 21 **TeachSG Student Volunteer**

Teaching Volunteer
Singapore

- Mentored Christchurch Secondary School students as part of a free-tuition program organized by YoungBuds, a student-led group under TeachSG, an outreach initiative for low-income youth by NUS Office of Student Affairs

Aug 19 - Sep 19 **Project Kickstart 2019 by NUS Students' Computing Club**

Teaching Volunteer
Singapore

- Volunteered on Saturdays as a team of 30 University students to introduce 60 under-privileged children from a local Community Centre to Programming (via Scratch) and Robotics (via LEGO Mindstorms NXT kits)



Proud member of a motorcycle group with a rich history — touring in neighboring Southeast-Asian countries, doing grassroots community work, and modifying project motorcycles

Privileged servant to 2 cats



Date: August 20, 2021

To Whom It May Concern

I, Huy Ho Nhat – Software Architect of QuantumSys, would like to refer and recommend Mr. Ritesh Kumar, to further his learning & career towards Entrepreneurship via the NUS Overseas College (NOC) program.

Over the period of May 2021 to July 2021, I have had the opportunity to work and monitor Ritesh's technical growth and qualities from the lens of a Software Architect whom the QuantumSys Technologies intern team consulted to bridge the technical experience gap. The project scope was interesting — the interns had to use Healthcare data from dialysis clinics to form a data warehouse then create multiple patient health visualisation and real-time monitoring dashboards and after gaining some intuition, employ some statistical models for forecasting. After witnessing the team's progress and Ritesh's contributions, I believe that he would be a deserving candidate for the entrepreneurship programme and would like to mention some of his more defining qualities.

As second year undergraduates, the intern team was relatively new to the industry-standards of Software Engineering practices, but they have all shown commendable growth and flexibility when handling the project. Ritesh is comfortable in novel technical situations in which he may have had little experience. This project gave the interns the exposure to many new open-source tools which provided the perfect opportunity to pick up industry-standard skills. In this period, I've come to realize that Ritesh's humility is a great asset to himself; he readily sounds off his shortcomings and seeks help without overpromising. Nonetheless, his foundations allow him to tap on his intuition and communicate his ideas and approaches to problems fluently.

More importantly, Ritesh is a very supportive teammate that helps his peers grow. The individual flair he has shown in his work such as his code quality, the way he communicates ideas or questions, helps create positive standards that compel his peers to follow suit. These sentiments were echoed by his fellow interns as well, during the project handover. Over the years of my experience in the tech industry, it is a common belief that technical gaps can be achievable and solvable in just a matter of time and training but team-culture, working attitude and the soft skills of a person are more deep-seated and hence, more challenging to improve upon. Ritesh's natural inclination towards growing together with the people around him make him an easily trainable person and a valuable teammate.

As a senior engineer, I have experience in interviewing and recruiting candidates for GovTech; the qualities that Ritesh has displayed over his internship period is promising and beyond the expectations. He's a strong candidate individually and I'm confident that his focus on creating a nurturing environment around him will make him a sincere candidate for this entrepreneurship programme. I wish Ritesh all the best for his future.

Please feel free to contact me at huy.ho@quantumsystech.com for any further enquiries.

Huy Ho Nhat
Software Architect