

School of Computer Science and Engineering

CZ3002 Advanced Software Engineering

**Project Proposal**

Project Name: Hangout

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Group Name: Mac & Cheese

Lab Group: TDDP1

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| --- |
| **Group Members** |
| Jethro Phuah An Ping (Team Leader) |
| Lam Zhi Fah (Deputy Team Leader) |
| Alicia Chua Jieying |
| Ernest Ang Cheng Han |
| Ong Jing Heng Shaun |
| Ong Sim Hao |
| Shannon Tan Xinyi |

Submitted to—

Dr Althea Liang

Department of School of Computer Science and Engineering, Nanyang Technological University

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# Executive Summary

This proposal aims to provide an overview of the application (app) our team hopes to develop, the reasons behind wanting to develop such an app, as well as how we intend to manage the project so that it runs smoothly.

Through our app, we hope to foster ties within the community and allow residents to explore hidden gems in different neighborhoods. We want Singaporeans to know that, in contrast to popular belief, our neighborhoods are vibrant and full of excitement. There are many places for residents to unwind after a hard day at work.

These objectives will be fulfilled by the 3 main features of our app:

1. Event finder
2. Places-of-interest finder
3. Food finder
4. Meet-up Initiator

Details about the implementation have been explained in our proposal.

We believe that our app will make a difference in how Singaporeans view their homeland and we would love to have your company onboard our project.

# Statement of Problem

A survey conducted in 2020 reported that 8 in 10 Singaporean employees experience burnout from work (Singapore Business Review, 2020). This comes as no surprise, given that Singapore was placed 32nd out of 40 countries when it came to work-life balance in a study recorded in 2019 (Joanna Saw, 2019). Singapore was also ranked 2nd in terms of hours worked per week, clocking in 45.6 hours, second only to Hong Kong (50.1 hours) (Channel News Asia, 2018). To make matters worse, there is a phenomenon of an “always on” culture permeating in Singapore; The rapid growth of technology has made it a norm for employees to be able to perform work tasks through their technological devices at any time of the day. Given these statistics, it is clear that a large majority of the Singapore working population are constantly preoccupied with their work and lack time for social interactions with family and friends.

The COVID-19 pandemic has also done nothing in enabling the social relationships of Singaporeans. According to reports by The Straits Times in 2021, the extended circuit breaker imposed by the government in 2020 resulted in social isolation amongst many Singaporeans (A-Star, 2021). Alarmingly, there is a significant and unique association of different social isolation indicators with depressive symptoms in community-dwelling adults aged 21 and above (Ge L, Yap CW, Ong R, Heng BH, 2017). What this means is that the social isolation that arises from strict government regulations can potentially lead to depression amongst Singaporeans in the long run.

Therefore, the workaholic culture in Singapore, compounded by the strict government regulations against COVID-19, mean that the average Singaporean has little to no time at all to engage in social activities. The negative implications that social isolation has on one’s mental health means that there is an urgent need to promote social interaction amongst Singaporeans.

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# Objectives

1. Encourage users to step out of their comfort zones and socialize by introducing the latest social events to them.
2. Promote user’s exploration of their community by helping them to locate nearby places of interest and food.
3. Help users to make new friends by allowing them to look for interested parties to go out with.

Social events like street performances, carnivals, food fairs or “pasar malams” are always happening in Singapore. Admins of the app can track these events and initiate them in the app. The app will then notify users when there is a social event that is about to happen. This feature ensures that users are always kept up-to-date with the latest exciting events happening around Singapore and entice them to go out and explore these events.

Places of interest in Singapore can be segmented into various categories such as entertainment and sightseeing. The app can inform users on nearby places of interest based on their current physical location. In addition, users can rate places of interest they have previously been to so that users can search for a specific place of interest based on its region, category and rating. This ensures that users are able to find potential places to meetup based on their interests and preferences. The rating system provides users with user feedback from others who have already frequented the place.

To complement the 2 features mentioned above, the app will also have a ‘Looking for group’ feature, where users can self-initiate a meetup, indicating details of the meetup, like the time and location. Users can browse through the list of initiated events to scout for potential opportunities to meet new friends. This ensures that the social experience is always fresh as users are always meeting new people. This feature also helps smaller groups of friends to quickly find kindred spirits to hangout with.

Additionally, no meeting is complete without a meal together. Our app compiles all the food options available in the neighbourhood and allows users to filter the options based on the type of cuisine they like, their preferred budget as well as their current physical location. Having a meal together breaks the ice within groups who are meeting for the first time and this feature ensures users can easily find a food location.

# Technical Approach

## Customer Needs

Customer needs refer to needs that a customer will have when they engage in our product or service. Identifying customer needs is crucial to ensure that our product can truly target our customers’ problems.

Our group decided on these 3 methods to identify the needs of our customers:

1. Focus groups
2. Social Media listening
3. Online Research

Focus groups aim to foster an open and honest dialogue with our customers. By connecting directly with our target customer group, we will develop a deeper understanding of how our customers’ react and respond to the products and solutions we provide. If customers are unable to find time to join our sessions, we can always do simple customer surveys to solicit feedback. Surveys serve as a great alternative to focus groups.

Besides that, our group also did social media listening. A recent Neilson poll highlighted that over 80% of people seek product recommendations online often through social media networks (Amity K, 2016) We can leverage social media to understand our customer needs better. However, since we currently do not have a social media page, we decided to scout other similar products on social media by reading their customer reviews and feedback. This will help to keep our product expectations in line with our customers’ expectations.

Lastly, online research helps to complement the customer needs identified by the earlier 2 methods. Online research gives us a better idea as to why a customer might feel a certain way about our product. With some in depth analysis and background information of the industry, we can understand the root of the issue and tackle it.

After engaging with our target audience, we identified 5 broad needs our users would like to experience in our app:

1. **Functionality**Our product needs to be able to solve our customers’ problems and desires effectively.
2. **Convenience**Our product needs to be a convenient solution to our customers’ problems by providing a seamless user experience and not creating extra hassle to our customers.
3. **Accessibility**Our product needs to be easily accessible at all times to provide solutions on demand.
4. **Performance**Our product needs to be running optimally so that our customers can achieve their goals in a short period of time.
5. **Reliability**Our product needs to function properly at all times with minimal errors.

## Target Specifications

1. Event Finder

Users will be updated on different events happening in the neighbourhood that they have chosen and they will be able to sign up for the events that they are interested in. This will enable a smoother process of checking and registering for events for the users. Users will no longer have to keep a lookout for event flyers on the neighbourhood bulletin board and the GRC/PA will be able to digitalise the marketing of these events to boost the turn-up rate and possibly attract the younger crowd.

1. Food Finder

Users will be able to search for food places ranging from hawker centers to trendy cafes in the neighborhood. In addition, they will also be able to apply filters and search for them according to cuisine, proximity and budget. This helps the user to easily find food available that interests them. This will also help smaller and less known food businesses around the neighborhoods to establish their digital presences and market their businesses.

1. Places-of-interest Finder

Users will be able to search for places to visit in the neighborhood. They will be able to find these places based on their current location, category (entertainment / sightseeing) and rating. This will encourage the exploration of the user’s neighborhood, possibly enabling the user to appreciate the neighborhood’s underutilized amenities and places-of-interest.

1. Meet-up Initiator

Users will be able to initiate and create outings to various places of interests or food locations with people in their neighborhood. Through this feature, they will be able to meet like-minded individuals who share the same interest as them. This helps to promote closer bonds within the community as it boosts social interaction.

## Technology Consideration

|  |  |
| --- | --- |
| **Technology used** | **Summary** |
| Firebase Database | In the initial stages of design and implementation, the GRC/PA would need to maintain a secure database which allows for the passwords of the users to be safely secured since this application requires users to log in. Furthermore, since the user is required to key in their own personal information, the Personal Data Protection Act (PDPA) will need to be strictly adhered to, to ensure that the particulars of users are safely secured and accessed only when necessary. |
| Singpass Gateway | In later stages of design and implementation, our team will be looking to add the Singpass gateway to allow for convenient and secure access to the application. The myInfo API would also allow for easy and secure retrieval of personal details. These implementations would be subjected to the approval by the Singpass team after submitting a linkup request. |

## System Architecture/Platform

The system platform of our choice is Android Studio 2020.3.1. We choose to use Android Studio over alternatives such as Eclipse because Android Studio makes mobile app development easier with its open-source platform and offers features such as a graphical user interface that other platforms do not.

We will use GitHub as our development tool. This is because GitHub provides a repository for multiple users to contribute to a single project, by forking the project, making changes and sending these changes to a pull request using GitHub web interface. GitHub also keeps track of all changes that have been pushed to the repository, allowing users to have a version history of their code so that previous versions are not lost with each iteration.

The system architecture we have chosen to adopt is the Model-View-Controller (MVC) pattern. The model component will correspond to all the data-related logic that the user works with. The view component will be used for the user interface of our application, such as any textboxes, radio buttons or dropdowns. The controller will act as the interface between the model and the view components to handle all the business logic and incoming requests, handle data using the Model component and interact with the View component to render the final output.

# Project Management

Below is a timeline that you can expect for this project:

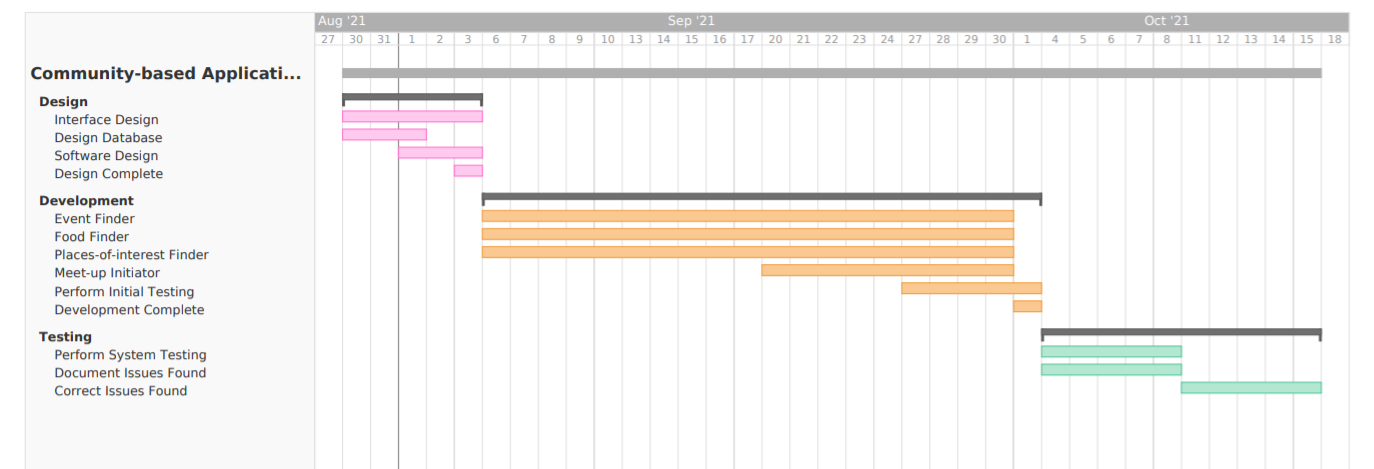


Figure 1. Gantt Chart For Community-based Application: Hangout

We will split this project into 3 phases - Design, Development and Testing. There are multiple tasks under each phase and the solid lines represent the timeline that we are looking to complete each task.

According to your company’s needs and requirements, further changes to the due dates can be discussed and agreed upon.

## Deliverables

We will be providing the following deliverables to ensure that your company is able to keep a record of the project’s development, as well as track any changes which have been made to the original app:

|  |  |  |
| --- | --- | --- |
| **No.** | **Document Name** | **What it contains** |
| **1** | Use Case Document | Use case diagram and descriptions |
| **2** | System Requirement Specifications (SRS) | Background of our app, app’s purpose, constraints, functional, operational, input, process, output, hardware and software requirements. |
| **3** | Quality Plan | Actions and metrics to ensure quality of our app |
| **4** | Project Plan | Roles and responsibilities of each member, work breakdown schedule, dependencies and project estimates |
| **5** | Project Plan (Risk Management Plan) | Risks we have identified and how we intend to minimize their impacts should they materialise |
| **6** | Configuration Management Plan | Configuration identification, control and support activities |
| **7** | Design report on software maintainability | Actions the team has taken to ensure that the app is able to maintained over a long period of time in the future, as well as how to maintain it |
| **8** | Change Management Plan | Changes to requirements which have been made to the original app along the course of the project |
| **9** | Requirement Test Coverage Report | Tests which have been conducted to ensure that our app is functional |

## Budget

We estimate that we would require $168,642.06 for the project which spans across 3 months. The budget below does not cover beyond this period and additional costs may be incurred beyond the 3 month mark. The breakdown of the budget is as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Supplier** | **Quantity** | **Unit Price** | **Total** |
| Project Manager |  | 1 | $18,000.00 | $18,000.00 |
| Project team members |  | 6 | $14,400.00 | $86,400.00 |
| Computers | Dell | 7 | $1,500.00 | $10,500.00 |
| Printer | Fujitsu | 1 | $800.00 | $800.00 |
| Office rental | NTU | 1 | $3,000.00 | $3,000.00 |
| Transportation | Grab | 1 | $1,000.00 | $1,000.00 |
| Development SDK | Flutter | 1 | $47,756.40 | $47,756.40 |
| Firebase Database\* | Firebase | 1 | $1185.66 | $1185.66 |
|  |  |  |  | **$168,642.06** |

\*Do note that the payment for using Firebase Database is determined by the number of daily active users and is calculated on a monthly basis.

## Communication and Coordination with Sponsor

The goal of the following communication plans is to make sure that every stakeholder is updated throughout the project. Communicating efficiently and effectively about the status of tasks, team accomplishments, milestones etc. would help us keep on track and meet project deadlines.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Communication** | **Scope / Action Required** | **Frequency** | **Method** | **Audience** | **Owner** |
| Kickoff meeting | (Discussion during meeting)  - Introduce project  - Confirm objectives, goals, and deliverables needed | Once,  at the start of the project | In-person meeting (send video conference link for remote worker) | Project Sponsor | Project Manager |
| Weekly check-ins | (Information only)  - Updates on project status based on notes from internal project team meeting | Weekly | Email | Project Sponsor | Project Manager |
| Project status meetings | (Discussion during meeting/email follow-up)  - Updates on project status, gather feedbacks on milestones and discuss next steps | Monthly  or All milestones | Conference call | Project Sponsor | Project Manager |
| App design review | (Discussion during meeting/email follow-up)  - Gives project sponsor the opportunity to provide feedback on app design | Once,  after initial app design complete | In-person meeting (email with design sent prior to meeting) | Project Sponsor | UI/UX team |

## Team Qualifications

Jethro is an experienced project manager with many projects under his belt. Since joining the workforce, he has progressed from being a developer to taking on a managerial role within 2 short years. He had his first taste of leadership in the working world when he was promoted to become a procurement manager in 2016 at Data Science Technology Agency (DSTA). At DSTA, he honed his interpersonal and communication skills via requirements elicitation as well as liaising with both local and overseas suppliers. This prepared him for his role at Cognizant, where he joined in 2017 as a business and integration arch manager. He is part of the project management team and has managed many large-scale projects across many industries, including health, government and technology sectors. None of the projects he has managed thus far has an overrun schedule, or exceeded budget. He is known to be an inspiring and organized leader, who thinks ahead and genuinely cares for his members. He is also an excellent problem-solver who often thinks out of the box to solve problems.

Zhi Fah is currently a software engineer at Shopee. While he may not be the most experienced in the team, he is a quick learner and is extremely conscientious when it comes to his work. His greatest strength is being able to remain level-headed and think rationally under pressure. During his time in Shopee, he has been focused on reducing the amount of errors and vulnerability in the code to ensure a smooth customer experience. In order to make the risk assessment process more efficient, he automated the process by developing various in-house applications using React and NestJS. He is also extremely familiar with Node.JS and SQL. His qualifications make him a perfect fit as the Quality Assurance (QA) Engineer, where he will devise test plans to ensure our application is bug-free and ready for release.

Shaun is currently a full stack developer at Singtel. His journey at Singtel started in 2015 where he was a data analytics intern. Due to his good work ethic and performance during his internship, he was given a job offer before graduation. Since his entry as a full-time employee, Shaun has proven to be an invaluable member of the team, often suggesting solutions to enhance the Singtel website and enhance customer’s experience. He was one of the key personnel who developed the company’s website using NodeJS and JavaScript, which has seen increased efficiency rates of up to 20%. He is also well-versed in MongoDB and SQL. Among his peers and supervisor, he is known to be steady, calm and unafraid to voice his opinions and doubts. Given his credentials, he will be working as the back-end developer for our project and will also provide input to the front-end developer.

Sim Hao is currently a release manager at Microsoft. At Microsoft, he led a group of release engineers to write and execute test scripts and also liaised with production members, software engineers, QA professionals to ensure new products are implemented correctly and coded properly for successful integration. He has also been put in charge of setting release schedules for multiple software products. With him, software going live never gets delayed and is always delivered to the client on time. He is also the one who plans for the conference whenever a product is released. He is an organized and detail-oriented worker. No bug is too small for Sim Hao to notice.

Shannon is currently a front-end developer at Google. Her passion for UI/UX design sparked when she took a module on Human Computer Interaction back in university. She found it meaningful to design interfaces for a wide spectrum of users, particularly those with visual impairment. This led to her taking a year-long internship at DSTA, where she got to work with the UI/UX team to understand the considerations behind various application designs. She then found a full time job as a front-end developer at Google, where she implemented numerous websites, mobile applications and landing pages from concept through deployment via the use of HTML5, CSS3, jQuery and JavaScript. She also assessed various UI/UX designs for technical feasibility. Her experience at Google will definitely be beneficial to our project and ensure that our application is user-friendly across all age groups, as well as aesthetically pleasing to the eye. Shannon is an excellent communicator and able to convey her ideas tactfully and convincingly to others. She is also meticulous with her designs and is able to think from the user’s point of view. Lastly, she is always ready and open to hear fresh and new ideas to ensure her creativity is not limited by her own experiences.

Ernest is currently a lead developer at GovTech Singapore. Before he got promoted to become a lead developer, Ernest was working as a software engineer. His time as a software engineer saw him developing numerous applications with Java, JavaScript, SQL, as well as No SQL. He is extremely well versed in creating applications and websites, as well as in requirements elicitation. After his promotion, he took on a more managerial role, where he led and guided development and operational team members. However, that is not to say he has abandoned coding. As a lead developer, he continues to develop, test, implement and maintain application software. He is also familiar with migration of code between the dev, prod and testing environments. Ernest is a serious and hardworking employee, often going the extra mile to ensure that the software is running smoothly. He is a dependable and reliable worker.

Alicia is currently a software engineer at Facebook. Her love for coding began before university, where she signed up for a coding class for fun. She has never looked back since. She first did a software engineer internship at Development Bank of Singapore (DBS), where she got to experience what it was like to code at a corporate level. She learnt how to automate processes using Python during her time there. After graduation, she started working as a software engineer at Facebook where she now maintains and improves existing codebases and also continuously tries to incorporate new and fresh technology into Facebook’s current products.

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# References

Kamiński, J. (2020, October 30). *How much does it cost to develop a Flutter app?* Retrieved from App Lover: https://applover.com/blog/how-much-does-it-cost-to-develop-a-flutter-app/

*See a Cloud Firestore pricing example.* (2021, August 30). Retrieved from Firebase: https://firebase.google.com/docs/firestore/billing-example#medium-1m-installs

# Appendix A: Résumés of Team Members

## Alicia Chua Jieying

+65 9888 8585 | achua025@e.ntu.edu.sg

**Education**

**Nanyang Technological University** **August 2016 - May 2019**

Bachelor of Business (Business Analytics) **Class of 2019**

Bachelor of Engineering (Computer Science) **Class of 2019**

CGPA: (BUS) 4.12 | (CSC) 4.09

**Professional Experience**

**Facebook**

Software Engineer **Aug 2019 – Present**

• Maintained and improved existing codebases

• Analysed and incorporated user requirements into software application

• Research and test new software which the company can use and incorporate into existing products to increase efficiency

**Development Bank of Singapore (DBS)**

Software Engineer Intern **May 2017 – Aug 2017**

• Automated the process of retrieving data from MongoDB database using Python

• Wrote and executed test scripts. Implemented bug fixes

• Participated in the requirements documentation and suggested features to include in the software product

**Extra-Curricular Activities**

**Youth Leader at Glad Tidings Church Jan 2016 – Jan 2018**

• Teaching them life skills

• Taught a group of female teenagers biblical values and stories weekly Part of the planning committee for a 3 days 2 nights camp, in charge of campers’ welfare

**Other Information**

**Languages**: English, Mandarin

**Technical**: Microsoft Word, Powerpoint, RStudio, Python, mySQL

**Interests/Hobbies:** Travelling, watching videos, spending time with family and friends

## Ernest Ang Cheng Han

Ang Mo Kio Avenue 10, Blk 98, #09-591, Singapore 530098 | 8101 1234 | erne0009@e.ntu.edu.sg

**Education**

**NANYANG TECHNOLOGY UNIVERSITY | AUG 2013 – MAY 2016**

· Double Degree in Business & Computer Science with specialization in Business Analytics

**Work Experience**

**LEAD DEVELOPER | GOVTECH SINGAPORE | JAN 2020 – PRESENT**

· Develop, test, implement and maintain application software working with established processes

· Provide guidance and assistance to development and operational team members

· Contribute towards the strategic direction for the DTSS Service Management in providing comprehensive technology consulting

· Establish methods for code development and migration within dev, test, prod environments for consistent methodology across releases

**SOFTWARE ENGINEER | GOVTECH SINGAPORE | AUG 2016 – JAN 2020**

· Engineered modern applications with Java, JavaScript, SQL Server, and No SQL.

· Built innovative microservices and Web Services (incl. SOA/SOAP/REST/XML).

· Utilized Cloud Foundry for efficient building on top of Kubernetes.

· Efficiently deployed and integrated software engineered by team and updated integration/deployment scripts to improve continuous integration practices.

· Liaised with Product Managers to identify minimum viable product requirements and clearly defined feature sets into well-scoped user stories for individual team members.

**CCA/Activities**

**WELFARE SERVICE CLUB, NANYANG TECHNOLOGICAL UNIVERSITY| YOUTH MENTOR| MAY 2014 – AUG 2014**

· Tutored and supported rehabilitation of youth-at-risk at Singapore Boy’s Home

**Others**

· **Written and Spoken Languages:** Proficient in English and Mandarin

· **IT Skills:** Proficient in Microsoft Office, Python, R-studio, C, C++, C#, Java, MySQL, HTML and CSS.

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## Jethro Phuah An Ping

Mountbatten Ave 7, Blk 23, #08-423, Singapore 400481 | 88888888 | jethrophuah@gmail.com | jethrophuah.github.io/resume.html

**Education**

**NANYANG TECHNOLOGY UNIVERSITY | AUG 2012 – MAY 2015**

· Double Degree in Business & Computer Science with specialization in Business Analytics

**Work Experience**

**BUSINESS & INTEGRATION ARCH MANAGER | COGNIZANT | JAN 2017 – PRESENT**

· Managed delivery for application development projects using waterfall and agile methodologies

· Advised client board members and steering committee on project objectives, resource allocation and budgetary controls

· Collaborated with finance and contracting team to ensure key performance indicators are met

**PROCUREMENT MANAGER | DSTA (DATA SCIENCE TECHNOLOGY AGENCY) | JAN 2016 – JAN 2017**

· Understood users’ requirements and formulated the best approach to fulfil them

· Liaised with local and overseas suppliers across multiple products

· Initiated and conducted market research, engaging at least 20 industries to understand market supply conditions

**PX4 DRONE DEVELOPER | DSTA (DATA SCIENCE TECHNOLOGY AGENCY) | AUG 2015 – JAN 2016**

· Self-taught and familiarized with the Linux platform.

· Explored and experimented with QGC (Q Ground Control), PX4, MAVROS and Gazebo simulation.

· Successfully implemented the Follow-Me Mode for a drone to follow a target drone via GPS signal in the Gazebo simulator environment which was yet to be accomplished in the open-source repo.

· Integrated MASK-RCNN model using ROS and OpenCV to our simulated environment.

· Devised an algorithm in C++ to allow drone to follow the target drone movement via MAVROS using the CV model as mentioned above.

**CCA/Activities**

**SCDF X IBM LIFESAVER’S INNOVATION CHALLENGE 2021| TEAM LEADER| MAY 2014 – AUG 2014**

· Assembled a fully integrated IoT system for hydrant testing that aims to test the static pressure of hydrants remotely.

GARAGE @EEE HACKATHON 2013| TEAM LEADER| JUNE 2013 – AUG 2013

· Constructed a device with [#IoT](https://www.linkedin.com/feed/hashtag/?keywords=iot&highlightedUpdateUrns=urn%3Ali%3Aactivity%3A6758792685630427136) functionalities to augment a regular pull up bar to track the range of motion and the form of a person performing pull-ups.

· Spearheaded the software development of theBar app that compliments the device

· Mentored by CTO of NinjaVan (Shaun Chong) and co-founder of Augmentus (Daryl Lim)

**Others**

· **Written and Spoken Languages:** Proficient in English and Mandarin

· **IT Skills:** Proficient in Microsoft Office, Python, R-studio, C, C++, C#, Java, MySQL, HTML and CSS.

· **Other skills:** Strong team player with outstanding interpersonal and communication skills

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## Lam Zhi Fah

1 Nanyang Ave, Singapore, 535161 | +6581289025 | [lamzf1998@gmail.com](mailto:lamzf1998@gmail.com) linkedin.com/in/lam-zhi-fah-0b6661183

**Experience**

**SOFTWARE ENGINEER | SHOPEE | AUG 2019 – PRESENT**

· Refactored multiple microservices to reduce code vulnerability and improve code quality.

· Performed root cause analysis of error logs. Proposed and successfully implemented bug fixes.

· Developed risk and performance analysis applications for the risk business team using React and NestJS.

· Built Node.js APIs to support dashboard's features as well as SQL scripts to query and optimize huge amounts of data across different databases.

**MACHINE LEARNING INTERN | DEFENCE SCIENCE & TECHNOLOGY AGENCY | MAY 2016 – AUG 2016**

· Required to collect different radio frequency signals and waveforms using commercial equipment such as HackRF One and Software Defined Radios.

· Understand how military radios and communication systems function and utilise frequency hopping signals to transmit messages.

· Build up machine learning models that can improve classification and prediction of different Radio Frequency signals.

**Education**

**DOUBLE DEGREE IN BUSINESS AND COMPUTER SCIENCE | NANYANG TECHNOLOGICAL UNIVERSITY | AUG 2015 – 2019**

Specialized in Data Analytics.

**Skills & Abilities**

· Proficient in Microsoft Office.

· Written and spoken languages: English and Mandarin.

· Excellent interpersonal and communication skills.

· Python, R Studio, Jupyter Notebook, MySQL, Object Oriented Programming, Java, Unity.

· Analytical skills and model building in data processing

**Activities**

**TWENTY-ONE YOUNG HEARTS LOCAL COMMUNITY INVOLVEMENT PROJECT PORTFOLIO | NTU HALL OF RESIDENCE 5 | AUG 2016 – MAY 2017**

Served as a committee member in the LCIP portfolio to plan and organize volunteer projects at elderly and children homes for the committee members and hall residences to take part in.

## 

## Ong Jing Heng Shaun

+65 9867 1234 | jong105@e.ntu.edu.sg

**Education**

**Nanyang Technological University** **August 2013 - 2016**

Bachelor of Business (Business Analytics) **Class of 2016**

Bachelor of Engineering (Computer Science) **Class of 2016**

CGPA: (BUS) 4.67 | (CSC) 4.87

**Professional Experience**

**Singapore Telecommunications Ltd (Singtel)**

Full Stack Developer **Aug 2016 – Present**

• Developed the company’s backend website using NodeJS and JavaScript

• Performed risk assessment and implemented solutions to resolve bugs

• Enhanced security and data protection settings for MongoDB databases

**Singapore Telecommunications Ltd (Singtel)**

Data Analytics Intern **Jun 2015 – Aug 2015**

• Used R Language to manipulate data needed for analysis

• Provided meaningful insights based on analysing customer activity on company’s website to enhance customer experience

• Recommended solutions to boost company’s performance

**Extra-Curricular Activities**

**Welfare Services Club, Friends of Children (Teens Action Project) Sept 2015 – May 2016**

Sub – Committee

• Interacting with kids, helping them with their homework

• Teaching them life skills

**Other Information**

**Languages**: English, Mandarin

**Technical**: Python, C, C++. Java, RStudio, SQL, Microsoft Office

**Interests/Hobbies:** Erhu, Contract Bridge, Photography

**Ong Sim Hao**+65 91821361 | SONG049@e.ntu.edu.sg

**Education**

**Nanyang Technological University, Singapore AUG 2015 – MAY 2018**

• Bachelor Of Business (Business Analytics)

• Bachelor of Engineering (Computer Science)

• BBus CGPA: 4.76

• BEng CGPA: 4.89

**Professional Experience**

**MICROSOFT AUG 2019 – PRESENT**

*Release Manager*

• Liaised with production members, software engineers, and Quality Assurance (QA) professionals to ensure products are configured and implemented successfully

• Wrote and executed test scripts to ensure that new products are configured and coded properly for successful integration

• Set release schedule for multiple software products

**IBM AUG 2018 – AUG 2019**

*Cloud Engineer*

• Used DevOps practices and methods to plan and create software applications

• Developed, tested and delivered Cloud-based solutions

• Analysed client development environment to champion DevOps and CI/CD practices

• Designed, coded, and tested component-level solutions in areas such as cloud foundation, cloud services, cloud management applications, machine learning, natural language processing and security applications

**Achievements / Extra- Curricular activities**

**SEA Games**   **JUN 2013**

*National High Jump Athlete*

• Represented Singapore in the 2015 SEA Games

**OCIP Cambodia NOV 2014**

*Education Committee*

• Involved in the planning and design of interactive lessons aimed at educating Cambodian youth on the concepts of Financial Literacy and Micro-Finance

• Spearheaded the impartation of financial literacy skills to 30-40 Cambodian youth aged between 5 and 15 through cooperative game sessions

**Other Information**

• Languages: English, Mandarin

• Technical Skills: Python, C, C++, Java, SQL, NoSQL, RStudio, Microsoft Office, PowerBi

• Interests/Hobbies: Music, Sports, Athletics

## 

## Shannon Tan Xinyi

Tampines Ave 7, Blk 456, #12-648, Singapore 520456 | 9781 2345 | shannontan@gmail.com

**Education**

**NANYANG TECHNOLOGY UNIVERSITY | AUG 2017 – MAY 2020**

· Double Degree in Business & Computer Science with specialization in Business Analytics

**Work Experience**

**FRONT-END DEVELOPER | GOOGLE | MAY 2020 – PRESENT**

· Implemented websites, mobile applications, and landing pages from concept through deployment.

· Standardized all output with a new, responsive, mobile-first approach and strategy.

· Assessed UX and UI designs for technical feasibility.

· Developed standard and ad hoc reports in graph format as required.

· Collaborated with product team members to implement new feature developments.

· Designed dynamic and browser compatible pages using HTML5, CSS3, jQuery, and Javascript.

· Built single page applications (SPA), responsive web design, UI using HTML5 grid layouts, CSS3 media queries where it is an expression and can be used to either true or false.

**UI/UX INTERN | DSTA (DATA SCIENCE TECHNOLOGY AGENCY) | JAN 2018 – JAN 2019**

· Deliver digital working files and comps for developers and clients

· Assist the business unit team with day-to-day work that covers activities across the division

· Work with others in the business unit group on initiatives aimed at process improvements

· Create and execute human-centered designs that differentiate our brands in the marketplace around the world

· Iterate based on “validated learning” – More testing and analysis as you work with designers and researchers to validate recommendations and designs

· Engage in voice of customer site visits and develop insights and outcomes to drive and align teams around opportunities

· Responsible for leading or assisting in the completion of business unit projects as assigned

**CCA/Activities**

**DEVELOPER STUDENT CLUB, NANYANG TECHNOLOGICAL UNIVERSITY| EVENT LEAD| MAY 2017 – AUG 2019**

· Plan and execute meaningful events to grow student’s knowledge on various Google technologies and inspire future developers

**Others**

· **Written and Spoken Languages:** Proficient in English and Mandarin

· **IT Skills:** Proficient in Microsoft Office, Python, R-studio, C, C++, C#, Java, MySQL, HTML, CSS, JavaScript, jQuery

· **Hobbies:** Culinary Art