# Evon Dong Bing Bing

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Singaporean · Eligible for H-1B1 visa in US

## EDUCATION

**National University of Singapore**                                    **August 2018 - December 2021**

**Bachelor of Computing (Honours) in Computer Science**
- Relevant coursework: Programming Methodology, Data Structure & Algorithms, Software Engineering, Computer Networks, Information & Computer Security, Operating Systems, Artificial Intelligence, Software Engineering Principles & Pattern, Database Systems, Software Testing

## WORK AND INTERNSHIP EXPERIENCES

**ByteDance Inc. (TikTok Pte. Ltd.)**                                    **December 2021 – Present**
*Senior Software Developer (Product Infrastructure)*                          *2023 - Present*
- Led a team to design and build Traffic Rate Limiter platform for TikTok Shop, resulting in exponential growth in GMV to $30+ billion/year
- Planned, organized and executed traffic rate limit strategies and plans for key sales events (e.g Black Friday sale in US and Europe, Ramadan sales in Asia etc)
- Built system with 98% coverage rate which detects abnormal service changes and deployments to speed up troubleshooting process
- Conducted in-depth investigation and developed optimization plans for low SLI services, successfully enhanced SLI of all core services to 99.95+%
- Solved and troubleshooted 532+ production issues with high response rate of 99.9%+ and prompt response time of 2.35mins during oncall duty for all regions (Asia, Europe and US)
- Appointed to travel to US and China to collaborate with multi-regional teams to develop and deploy risk inspection and detection software globally
- Mentored interns and team members on system architecture design, code development, troubleshooting techniques etc

*Software Developer (Product Infrastructure)*                                *2021 - 2022*
- Built alarm governance system which injects monitoring alarms and successfully uncovered 85% of stability problems with root cause analysis
- Developed bots that integrate services with tools that enhanced stability monitoring coverage to 100% and boosted troubleshooting efficiency
- Designed the architecture and implemented solution that optimized accuracy of stability and latency metrics to 100% in all data centers

*Awards:* **Spot Bonus Winner 2022** & **Spot Bonus Winner 2023** *for excellent performance and being exemplary role model*
*Tools/Skills: Golang, Python, MySQL, Redis, MongoDB, Linux Env, React, Docker, Kibana, Grafana, Figma, EventBridge*

**Singtel Group (Singapore Telecommunications Limited)**            **May 2021 – August 2021**
*Software Developer Intern for Network Cloud Optimization*
- Built software that performs automated monitoring of the network devices (firewall, switches, routers) active alarms during Huawei eSight migration period with 100% success rate
- Implemented a program that detects 99.9% of abnormalities on the provider routers at scheduled intervals for efficient troubleshooting of outages, improving productivity rate by 95%
- Designed and developed visually appealing email notification pages with interactive features using Jinja Template to optimize user experience
- Utilized Agile methodology (Scrum) and communicated with stakeholders throughout software lifecycle from ideation and requirements definition to development and deployment in production environment
- Documented and tracked issues and projects using Atlassian toolset (Jira, Confluence) and GitLab
- Proposed a business proposal on 5G value propositions for Digital Twin applications and researched on 5G networks and AR-VR-MR-XR technologies

*Tools/Skills: Python, Bash script, Red Hat Ansible, Ansible Tower, Linux Environment, SSH, Atlassian toolset (Jira, Confluence), GitLab, Jinja2, HTML & CSS*

## NCS Pte Ltd & TrustWave Holdings                                      May 2020 – August 2020
*Software Developer Intern for Post Quantum Security & AI*
- Built a post-quantum module by classifying and collating all the NIST Post-quantum Digital Signature Algorithm candidates into a C++ library in Linux environment
- Designed and implemented an Inter-Process Communication interface to integrate post quantum key exchange module with OpenVPN using knowledge of OS shared memory and principles of SSL/TLS
- Programmed in C/C++ for application of cryptographic primitives
- Constructed quantum safe OpenVPN for transmission between robot server and clients and analyzed the difference in performance using a multitude of networking tools
- Researched on implementation of OpenVPN architecture, virtual networking and static analysis tools

*Tools/Skills: C, C++, OpenVPN, SSL/TLS, Linux environment, Makefile, GCC, GitHub*

## A*STAR - Institute for Infocomm Research                              May 2019 – August 2019
*Software Engineering Intern*
- Utilized Robotics Operating System (ROS) to advance and achieve robust autonomous vehicles (AV) perception
- Improved and deployed automation process for testing and analysis using C++
- Explored various sensors involved including Light Detection and Ranging (LIDAR) sensors
- Researched about numerous robots and their operating system
- Did independent learning about data analysis using Matplotlib and Pandas library in Python
- Explored different deep learning CNN models for image recognition and image classification

*Tools/Skills: C++, ROS, Python, Matplotlib & Pandas library, CNN models*

# PROJECTS

## Static Analyzer Program                                               August 2020 – November 2020
*C++, C, Python, CMake*
- Built a static analyzer which analyzes a program extracts relevant information into a program knowledge base
- Constructed a query processor which retrieve and evaluates appropriate results based on various queries
- Immersed in full SDLC lifecycle with multiple iterations to incorporate new features and bug fixes
- Designed the architecture of a large-scaled software system to optimize evaluation time by 57%
- Developed extensive automated tests of over 92% coverage to consider all possible scenarios
- Produced comprehensive software documentations and reports

Link: https://github.com/EvonDong/static-analyzer-program

## Nerdspace                                                             August 2020 – November 2020
*React, Firebase Realtime Database, Redux, Node JS, Express, Postman*
- Built a specialized buddy finder application that match students based on their educational background and relevant interests
- Designed and implemented virtual study rooms for students to share notes and meeting agendas
- Utilized Firebase Realtime Database to develop messaging features and chat rooms
- Implemented REST APIs using Node JS and Postman to serve data to React frontend
- Constructed detailed data visualization elements for users to find common free time with their buddies

Link: https://github.com/EvonDong/Nerdspace-web-app

## Shoppertize E-commerce Website                                        June 2020 – August 2020
*Django, SQLite, HTML, CSS, Bootstrap, Python*
- Created a stylish, sophisticated e-commerce website using Django MVT (Model, View, Template) pattern
- Enriched the user interface with interactive features to provide a seamless, smooth user experience
- Embellished relevant products with conspicuous colored labels to prompt a sense of urgency for purchase
- Enforced robust security with authentication features

- Integrated with Stripe API to enable cashless payment via Stripe

Link: https://github.com/EvonDong/Shoppertize-Ecommerce

**ExcerTracker**                                                    **June 2020 – August 2020**
*MERN (MongoDB, Express, React, Node.js) stack, Javascript*
- Developed a functional fitness tracking web application to inspire users to exercise
- Implemented logging and registration system for new and existing users
- Designed a countdown page with a clock ticking down in real-time to spur users towards their exercise goals
- Augmented the recommendation page with details and splendid landscape images for inspiration

Link: https://github.com/EvonDong/ExcerTracker-MERN

**TreasurerPro**                                              **August 2019 – December 2019**
*Java, JavaFX, Junit, Travis*
- Developed a desktop application for organizations to regulate their expenses and display detailed analysis of their revenue
- Implemented cashier features and inventory system with auto-correction features to keep track of the stocks and enable immediate transactions
- Enhanced test coverage to more than 90% (for individual package) using Junit
- Designed and created the layout of the application using JavaFX
- Developed Activity diagrams, Sequence diagrams and Use Case diagrams using tools for UML
- Utilized Gradle scripts for building and deploying the application

Link: https://ay1920s1-cs2103t-t13-3.github.io/main/

## COMPETITIONS

**Shopee Code League 2020**                                      **June 2020 – July 2020**
**Data analytics**
*Python, Neural Network, Keras, TensorFlow, Natural Language Toolkit (NLTK)*
- Researched on data visualization and various machine learning models
- Worked on training a neural network model for product identification using object detection algorithms and image pre-processing frameworks to reduce noise
- Experimented with natural language processing including text mining and sentiment analysis using NLTK

**Defence Science and Technology (DSTA) Brainhack Challenge 2020**      **June 2020 – July 2020**
**Cyber Defenders Discovery Camp Competition**
*Python, Linux Environment, C/C++*
- Developed and enhanced vital cybersecurity techniques by finding loopholes and capturing the flag
- Delved into the fundamentals of various operating systems, computer access control, firewall, encryption, intrusion detection systems and reverse engineering
- Examined the common types of cyber-attacks including privileged escalation, denial-of-service attacks and multi-vector, polymorphic attacks

**Angel Hack 2019**                                                      **July 2019**
**Singapore Stock Investment**
*Ruby on Rails, HTML, CSS, PostgreSQL*
- Built a website that analyzes and screens stocks listed on Singapore Exchange based on numerous indexes and investing systems
- Planned and designed the display of the webpage using HTML and CSS
- Explored and researched about various web harvesting tools including BeautifulSoup
- Retrieved and manipulated data in databases using PostgreSQL
- Implemented UI using Model-View-Controller (MVC) pattern to create responsive web pages

**Defence Science and Technology (DSTA) Brainhack Challenge 2019**           **June 2019**
**Image Classification**
*Python, Convolutional Neural Network (CNN), Keras, TensorFlow, AWS*

- Worked on AWS to develop pipeline and train the model to classify a dataset of images using Keras, TensorFlow library
- Researched on ways to prevent overfitting and reduce noise in images
- Explored various learning models to refine existing model for higher accuracy
- Examined and learnt about the fundamentals of Convolutional Neural Network

## TECHNICAL SKILLS

- Experienced: Golang, Java, Python, HTML & CSS, Ruby, ReactJS, Vue, MySQL, Redis
- Familiar: C, C++, JavaScript, NextJS, Django, MongoDB, Heroku, Nginx, Docker, Kubernetes, Microservices

## CERTIFICATIONS

- AWS Certified Cloud Practitioner & AWS Cloud Practitioner Essentials
- IBM – Introduction to Containers, Kubernetes and OpenShift
- Stanford Online – Databases: Relational Databases and SQL
- Stanford Online – Databases: Advanced Topics in SQL
- JPMorgan Chase & Co. – Software Engineering Virtual Experience Program

## ADDITIONAL INFORMATION

- Languages: English (Full professional proficiency), Mandarin (Native or bilingual proficiency)
- Interests: Full stack Software Development, UI/UX development, Cyber Security, Machine Learning, Robotics