

EVON DONG BING BING

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EDUCATION

National University of Singapore

2018 - 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, Distributed Systems

EXPERIENCE

ByteDance Inc. (TikTok Pte. Ltd.)

December 2021 - Present

Senior Software Engineer (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
- Analyzed and improved system bottlenecks, resource efficiency and boosted scalability, reducing response time and enhancing core system stability to 99.95+ SLI%
- Led the development of Change Control Platform that detects abnormal services changes and deployments, speeding up troubleshooting time by 73% and enhancing abnormal detection coverage to 98%
- Solved and troubleshooted 532+ production issues with high response rate of 99.9%+ and fast 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 Engineer (Product Infrastructure)

2021 - 2022

- Launched Alert Monitoring System that processed massive data to inject tuned alerts, enhancing observability to 99.7% and uncovered stability problems with root cause analysis
- Developed risk inspection tool to scan services to eliminate software vulnerability with recommended optimisation strategies
- Spearheaded the architecture design and implementation of the metrics synchronisation strategy, optimizing 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/Go, Python, MySQL, Redis, MongoDB, Linux, ReactJS, Docker, Kibana, Grafana, Figma, EventBridge, REST APIs

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
- Innovated and automated alert notification with interactive features using Jinja Python to optimize user experience
- Developed a tool that detects 99.9% of abnormalities on the provider routers at scheduled intervals for efficient troubleshooting of outages, improving productivity rate by 95%

- Led the communication with stakeholders throughout software lifecycle from ideation and requirements definition to development and deployment in production environment using Agile methodology (Scrum)
- 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, 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 containing all the NIST Post-quantum Digital Signature Algorithm candidates into a C++ library in Linux environment
- Defined and established Inter-Process Communication interfaces to integrate post quantum key exchange module with OpenVPN using knowledge of Operating System shared memory and principles of SSL/TLS
- Applied cryptographic primitives to data transfer processes, enhancing security to 99.7%
- Constructed quantum safe OpenVPN for transmission between robot server and clients and analyzed the difference in performance using a multitude of networking tools, optimising performance by 74%
- Conducted analysis on layout of OpenVPN architecture, virtual networks and static analysis tools

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

A*STAR - Institute for Infocomm Research

May 2019 - August 2019

Software Engineering Intern

- Refined autonomous vehicles (AV) perception system using Robotics Operating System (ROS), boosting AV perception by 89%
- Devised and generated automation tool for testing and analysis of perception algorithm efficiency using C++
- Explored sensors involved in AV perception including GPS, IMU, Light Detection and Ranging (LIDAR) sensors
- Conducted extensive research on autonomous robots and their operating system
- Analysed data collected from vehicle sensors and enhanced sensor and localization/mapping algorithm
- Improved accuracy and reliability of decisions for vehicle control by using 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

C++, C, Python, CMake

- Built a static analyzer which analyzes a program and extracts critical information into a program knowledge base
- Created a query processor which retrieves and evaluates accurate results according to complex queries
- Immersed in full SDLC lifecycle with multiple iterations to incorporate new features and bug fixes
- Designed the architecture of a large-scale, low-latency software system and optimized evaluation time by 79%
- Integrated extensive automated tests of over 99% coverage to consider all possible scenarios and edge cases

Nerdspace

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 to serve data to React frontend
- Redesigned detailed data visualization elements for users to find common free time with their buddies

Shoppertize E-commerce Website

Django, SQLite, HTML, CSS, Bootstrap, Python, Stripe

- Created E-commerce web application using Django MVT (Model, View, Template) pattern
- Enriched the user interface with interactive features to provide a seamless, smooth user experience
- Embellished sales 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

ExcerTracker

MERN (MongoDB, Express, React, Node.js) stack, Javascript

- Developed a 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
- Built recommendation system to recommend exercises based on user's exercising history

TreasurerPro

Java, JavaFX, Junit, Travis, Gradle, UML

- Developed a desktop application for organizations to regulate their expenses and display detailed analytics of their revenue
- Implemented cashier features and inventory system with auto-correction features to keep track of the stocks and enable immediate transactions
- Expanded test coverage to more than 95% 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

COMPETITIONS

Shopee Code League 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

Python, Linux Environment, C/C++

- Developed and refined 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 to detect system vulnerabilities
- Examined the common types of cyber-attacks including privileged escalation, denial-of-service attacks and multi-vector, polymorphic attacks

Angel Hack 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
- Transformed web pages to be interactive and responsive using Model-View-Controller (MVC) pattern
- Perform web crawler to mine data using BeautifulSoup
- Retrieved and manipulated data in databases using PostgreSQL

Defence Science and Technology (DSTA) Brainhack Challenge 2019

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
- Experimented on ways to prevent overfitting and reduce noise in images
- Explored various learning models to refine existing model for higher accuracy
- Examined and applied Convolutional Neural Network to large datasets

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
Extra	Cryptographic techniques (symmetric and asymmetric encryption, hashing, digital signatures)

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, Cloud Network, Cyber Security, Machine Learning, Robotics