

# Joel Chang

☎ +65 91523366 | ✉ joelchang@u.nus.edu | 📱 joelczk

## Education

### National University of Singapore

Singapore

YEAR 3 UNDERGRADUATE, BACHELOR OF COMPUTING (INFORMATION SECURITY), HONOURS

Aug 2018 - May 2022 (expected)

- Coursework: Computer Security Practice, Digital Forensics, Computer Security, Introduction to Computer Networks, Introduction to Operating Systems, Interaction Design, Introduction to Software Engineering, Penetration Testing Practice

## Technical Skills

**Experienced Languages** Python, C, C++, SQL, HTML/CSS, Shell, Docker

**Familiar Languages** React, Java, JavaScript

**Frameworks** Apache, Django, Flask, BootStrap

## Experience

### National University of Singapore

Singapore

CS2113T(INTRODUCTION TO SOFTWARE ENGINEERING) TEACHING ASSISTANT

Aug 2020 - Dec 2020

- Conducted code reviews for 10 students for their individual software engineering projects
- Reviewed and managed 2 teams of students for their software engineering team projects
- Conducted weekly lessons, regarding software engineering principles and best practices

### National Cybersecurity Research and Development Labs(NCL)

Singapore

CYBERSECURITY RESEARCH INTERN

May 2020 - Jul 2020

- Created a python-based scraping bot to **simulate the actions of an attacker controlling a botnet during a CDX**.
- Created a containerized bot using Docker to automate the user actions during a CDX, to generate network traffic
- Implemented a scalable examiner-examinee server that allows the exchange of information between the 2 servers inside Docker containers

### National University of Singapore

Singapore

ADVISOR

May 2020 - Jul 2020

- Managed 5 teams of freshmen in their summer software engineering project. Out of the 5 teams, **2 teams achieved the Apollo 11 award and 3 teams achieved the Gemini award**
- Acted as a project manager for the 5 teams, by ensuring that all of them meet the deadlines and are on track for their monthly submissions
- Provided 5 teams with advice on their software engineering journey along the way

## Projects

### Penetration Testing Project

Singapore

TEAM MEMBER

Jan 2021 - May 2021

- Conducted Penetration Testing for one of the IT systems hosted in NUS, using both automated testing and manual testing
- Participated in scoping meetings with stakeholders involved
- Wrote a report and gave a presentation on the findings to stakeholders in NUS

### Vulnerability Website (<https://github.com/joelczk/vulnerability-website>)

Singapore

DEVELOPER (DJANGO, SQLITE, WEB SECURITY)

May 2020 - PRESENT

- Collaborated with Prof. Sufatrio from NUS to create a vulnerable website and hardened website to allow easy deployment for educational purposes
- Created a vulnerable version of the website with vulnerabilities such as SQL Injection attacks and CSRF vulnerabilities
- Created a hardened version of the website using in-built Django libraries to ensure **proper network headers for the website, as well as, automated code analysis and file scanning functionalities using Github Actions**

### LumiRandom (<https://github.com/joelczk/LumiRandom>)

Singapore

PROJECT LEAD (PYTHON, FLASK, POSTGRES SQL)

Jan 2019 - May 2019

- Worked on web project to simulate NUS's module management website as part of CS2102(Introduction to Database) project. using **Python as the backend language and PostgreSQL as the database of choice**
- Collaborated with a team of 5 to implement the database schema and the backend of the project
- Gave a short presentation of the database schema and the implementation of the project to the tutors and received Distinction for this project

## Languages

**English** Professional Working and Speaking

**Chinese** Proficient Working and Speaking

## Awards

2020 **5th Position**, NUS Attack/Defense CTF  
2020 **Bronze Award**, DSTA CDDC  
2020 **Finalist**, DSTA Code Exp Hackathon  
2019 **DSTA CDDC**, Bronze Award  
2019 **Gemini Award**, Orbital Programme

Singapore  
Singapore  
Singapore  
Singapore  
NUS