

Daniel TAN

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Personal Statement

About Me

I am a Year 2 Computer Science undergraduate at the National University of Singapore. It was 10 years since I have started programming recreationally. From my first "Hello World!" program to my first web application, I have since developed a deep passion for developing software. Over the recent years, with the emergence of the prevalence of computer security vulnerabilities and its exploits, I have grown an interest in computer security and its integration in the development cycle.

Work Experience

My first internship was at A* Institute of Infocomm Research (i2R) for a duration of 6 months. My first task was to develop a simple malware analysis tool to aid the indexing of malicious android applications from third-party markets. I learnt a great deal about dynamic malware analysis, not only in terms of android malware analysis, but also Window's binaries. In addition, I had the opportunity to experience proper software engineering practices and processes through proper version control procedures and milestone schedules. Although the initial learning curve was steep and demanding, progressing and delivering a product to various clients was without a doubt one of the more gratifying experiences I have had thus far.

Subsequently, I was honored with the opportunity to advance my internship as a part-time software developer in i2R for a further 6 months during which I was given the freedom to explore cloud computing platforms like OpenStack, Google Cloud Platform and Amazon Web Services. Through this experience, I was able to further refine my programming skills and have had the chance to gain deep insights on cloud computing as a growing and emergent technology in terms of software adoption and delivery.

Internship Objectives

Having participated in an exchange programme, albeit a short one, I had discovered that I am an individual whom enjoys new challenges and experiencing new environments. Should the opportunity arise, I would hope to not only further refine my skills in software engineering but also to cultivate a new perspective and attitude on the industry. Equipped with the experience in the complexities and difficulties in a start-up environment and also the knowledge on how to overcome these challenges, it would definitely enhance my capabilities as an individual and a professional.

Unique Skill Sets

Firstly, having experienced an actual software developmental cycle in the workplace, I had to quickly adhere rapid changes in clients' demands and adjustments to a project's specifications. Keeping myself aligned with the team's schedule and the fast-paced work environment, it is apparent to me that my ability to adapt to such situations is a critical and essential trait as a IT professional.

Secondly, I have experienced leading teams. Apart from leading such teams in software engineering projects, as a Section Leader in the Singapore Armed Forces(SAF), I was tasked to manage and execute various training exercises. Through these experiences, I have gain significant insights and perspectives in leading teams and to ensure that a team functions as a cohesive and effective unit.

Lastly, my desire to learn and receptiveness to feedback. Driven by my passion for technology, I have always strive to seek for innovative solutions and approaches to solutions. Be it from online IT blogs or through critical feedback from peers, I have aimed to incorporate them into my projects.

Education

NUS(National University of Singapore)

B.COMP IN COMPUTER SCIENCE

- Course Details in Appendix A

Singapore

Aug. 2017 - Exp. May. 2021

International Summer/Winter Programme (i-SP), Korea University

KOREA UNIVERSITY, INTERNATIONAL WINTER CAMPUS(IWC)

Seoul, South Korea

Dec. 2018 - Jan. 2019

Singapore Polytechnic

DIPLOMA IN INFOCOMM SECURITY MANAGEMENT

- Cumulative GPA: 3.916/4.0
- Diploma+ Programme: Certificate in Business

Singapore

Apr. 2012 - May. 2015

Work Experience

Singapore Armed Forces(SAF)

THIRD SERGEANT - 4SIR(4TH SINGAPORE INFANTRY REGIMENT)

- Served in the Singapore Armed Forces(SAF) as a Infantry Squad Leader.
- Completed various local and overseas training exercises as part of 4th Singapore Infantry Regiment(4SIR).

Singapore

Jul. 2015 - Jul. 2017

A* Institute of Infocomm Research(i2R)

SOFTWARE DEVELOPER

- Integrated proprietary ciphers into open-sourced libraries, OpenSSL, and subsequently performed a performance comparison test on the proprietary ciphers with already available ciphers.
- Devised and conducted intercontinental data transmission performance testing on custom ciphers through the usage of Google Cloud Platform and open-source VPN Servers and Clients nodes.

Singapore

Feb. 2015 - Jul. 2015

A* Institute of Infocomm Research(i2R)

INTERN - SOFTWARE DEVELOPER

- Initiated the development of an Android Malware Analysis Tool using an interactive multi-processor disassembler and an open-source reverse engineering tool.
- Collaborated with fellow lab interns in the production of the analysis tool with structured version control methodology and Software Engineering Design Patterns.
- Analyzed and compared effectiveness of the proprietary tool and existing mobile security application in the detection of malicious behaviour in available mobile applications in the primary and secondary marketplaces and observed a 12% increase in detection rate.

Singapore

Sep. 2014 - Feb. 2015

Skill Sets & Proficiency

Programming	Python, Java	Proficient
	C	Intermediate
	Shell Scripting	Basic
Web Development	HTML5, CSS, JSP, Bootstrap	Proficient
	Django, Flask, Jinja2, Redis	Intermediate
Version Control	Git	Proficient
Database	MySQL, SQLite3	Proficient
	MongoDB	Basic
Software	Adobe CC, Microsoft Office	Proficient
OS	Windows NT, Backtrack, Kali, most Debian/Arch/Fedora-based Linux distros	Proficient

Language Proficiency

Spoken	English - Fluent, Mandarin - Fluent, Bahasa Indonesia - Beginner
Written	English - Competent, Mandarin - Average

Achievements & Awards

2015	Outstanding Class Leader Award , Singapore Polytechnic Excellence Awards 2015	Singapore
2015	Enhanced Learning in Information Technology(ELiTe) Achievement Award , IDA Singapore	Singapore
2014	DISM Silver Award , Singapore Polytechnic - DISM Day	Singapore
2013	Director's Honors Roll , Singapore Polytechnic - DISM Day	Singapore

Co-curricular Activities

HackSmith v2.0 Hackathon

Singapore

LEAD DEVELOPER OF TEAM SKADOOSH

Dec. 2018

- Collaborated as a team to develop a simple tool to examine and assess the prevalence of web application vulnerabilities, namely XSS and CSRF, in local systems in a 24-hr hackathon, HackSmith v2.0 (2018)
- Incorporate various existing open-source vulnerability and diagnostics scanners with good SE design principles into F.A.S.T. to improve general runtime of tests.

Google Developer Group (GDG Singapore in Singapore Polytechnic)

Singapore

MEMBER

Jan. 2014 - May. 2015

- Gained expertise in sustainable resilient software engineering principles in various workshops.
- Actively initiate good software design principles and patterns into various school projects.
- Proposed and incorporated good software design principles and defensive programming into academic curriculum to best raise awareness for importance of IT security in software development.

IS-SIG(InfoSec Special Interest Group in Singapore Polytechnic)

Singapore

MEMBER

Apr. 2013 - May. 2015

- Gained expertise in hacking & security areas, especially about internal of operating system based on UNIX and several exploit techniques.
- Participated in several youth awareness events as a helper and a presenter.
- Presented a novel malware analysis tool, capable of detecting malicious behaviour in binary programs through semantic awareness concepts, in GovWare 2015 as member of IS-SIG.

Additional Portfolio

Orbital NUS - UnderstandNot

Singapore

TEAM LEAD & LEAD DEVELOPER

- Collaborated as a team to create a video captioning solution by incorporating existing cloud service platforms with open-source Sanic Web Framework.
- Incorporated various available services, from AWS Transcribe Services to Bootstrap 4 to create a platform for subtitle editors to create and publish their work.

Fast And Simple Tool (F.A.S.T)

Singapore

LEAD DEVELOPER OF TEAM SKADOOSH

- Collaborated as a team to develop a simple Python tool to examine and assess the prevalence of web application vulnerabilities, namely XSS and CSRF, in local systems in a 24-hr hackathon, HackSmith v2.0 (2018)

tfidf-java

Singapore

SOLE DEVELOPER

- Developed a simple search term statistic analysis tool in Java.
- Incorporates various search term analysis algorithms like tfidf and cosine similarity with word stemming and search term expansion for improved relevance analysis.

Professional Certification

Organizational Wireless Security Auditor (OSWA)

Singapore

THINKSECURE

30 Jun. 2014

- An international wireless auditing and pentesting certification course which focuses specifically on providing IT professionals with the technical knowledge and skills of how to practically and technically conduct and execute wireless security audits & penetration tests against both wireless infrastructures and wireless clients.

Organizational Systems Security Analysts (OSSA)

Singapore

THINKSECURE

27 Sep. 2013

- An international practical and technical IT-Security certification course that develops IT-security professionals into IT-security practitioners, equipping them with practical and technical knowledge on securing enterprise networks and systems.

Proxor - Software Developer Assessment

Singapore

CARNEGIE MELLON UNIVERSITY

21 Jan. 2015

- Provides an accurate measure to assess the examinees ability to program realistic problems in a professional environment. Assessment ratings of software development skills, initially in Java and C, are implemented using technology and methodology developed in collaboration with Carnegie Mellon University (CMU).

Degree: Bachelor of Computing (Honours) in Computer Science

Cumulative Average Point: 3.81/5.00

Year	Level	Course Description	Grades
Aug - Nov 2017	Year 1/Semester 1	Programming Methodology	B+
		Data Structures and Algorithms	B
		Computer Organization	B-
		Natural Heritage of Singapore	B+
		Introductory Mathematics	B+
Jan - May 2018	Year 1/Semester 2	Discrete Structures	B
		Introduction to Computer Networks	B+
		Introduction to Operating Systems	A-
		English for Academic Purposes	B+
		Quantitative Reasoning	S
		Calculus for Computing	S
Aug - Nov 2018	Year 2/Semester 1	Independent Software Development Project (Orbital)	CS
		Effective Communication for Computing Professionals	B+
		Software Engineering	B
		Computer Security	B+
		Asking Questions	CS
		German 1	B
Jan - May 2019	Year 2/Semester 2	Computer Security Practice	In Progress
		Public Health in Action	In Progress
		Cyber Security	In Progress
		Fundamentals in Physics	In Progress
		Probability and Statistics	In Progress

NUS Grading Scale: A+ A (5.0); A- (4.5); B+ (4.0); B (3.5); B- (3.0); C+ (2.5); C (2.0); D+ (1.5); D (1.0); F (0)

S = Satisfactory; U = Unsatisfactory

CS = Completed Satisfactorily; CU = Completed Unsatisfactorily

EXE = Exempted; IC = Incomplete; IP = In Progress; W = Withdrawn