

# Kwek Ming Hong

☎ +6581233049 | ✉ me@kwekmh.com | 🔗 LinkedIn | 📄 GitHub | 📝 Blog

## EDUCATION

---

### University of Warwick

*BSc in Computer Science; **First Class***

Coventry, United Kingdom

*Oct 2015 – Jun 2018*

### Nanyang Polytechnic

*Diploma in Information Security; **GPA: 3.98/4***

Singapore

*Mar 2010 – Apr 2013*

## WORK EXPERIENCE

---

### Affinidi

*Application Security Engineer, Senior*

Singapore

*Jun 2023 – Present*

- Drive security strategy across all the products and workstreams in the organisation.
- Provide technical leadership and subject matter expertise as a security expert.
- Perform security reviews and assessments of services developed primarily in Node.js with TypeScript.
- Perform design reviews and security reviews of application architectures on Amazon Web Services (AWS).
- Build automated tooling to measure and enhance security testing as part of the CI/CD pipelines in GitLab and GitHub.
- Engage with senior leadership, engineering teams and product managers to advance product security.
- Serve as policy owner for Information Security Management System (ISMS).

### Ministry of Defence

*Consultant, Integrated Solutions*

Singapore

*Dec 2021 – Jun 2023*

- Adopted a start-up mindset as part of an unit incubated to bring certain integrated concepts to life, including by conducting roadshows and product demonstrations to garner stakeholders' interest.
- Developed projects across hardware and software stacks in various languages including Go, Python, C and C++.
- Designed and maintained secure infrastructure, including Virtual Private Networks (VPNs) and web servers, for delivery of services and products.

### Centre for Strategic Infocomm Technologies

*Consultant, Red Team*

Singapore

*Sep 2019 – Nov 2021*

- Conducted red teaming campaigns to audit the security posture of complex enterprise networks.
- Performed software auditing and penetration testing to identify weaknesses in systems.
- Developed tools and software to assist in penetration testing and red teaming operations.
- Worked on automation frameworks and systems to improve work effectiveness.

### Centre for Strategic Infocomm Technologies

*R&D Engineer, Networks and Systems Security*

Singapore

*Jun 2018 – Sep 2019*

- Performed security assessments of Linux-based systems and enterprise appliances.
- Performed vulnerability research and malware analysis on Linux-based systems and enterprise appliances.
- Developed userland and kernel software to support the security of Linux-based systems and enterprise appliances.
- Conducted penetration testing on web applications and complex networks.

### Goldman Sachs

*Technology Summer Analyst*

London, United Kingdom

*Jun 2017 – Sep 2017*

- Worked in the messaging engineering team under the Platform division, dealing with Tibco RV, Apache Kafka and other technologies.
- Developed a Python application to facilitate firm-wide usage of messaging engineering services.

### Centre for Strategic Infocomm Technologies

*Intern, Mobile Security Research*

Singapore

*Jun 2016 – Sep 2016*

- Performed vulnerability research on the Android platform.
- Analysed ARM and ARMv8 binaries through reverse engineering.
- Developed proof-of-concept code in Assembly for ARMv7.

## Nanyang Polytechnic

Singapore

*Development Technologist*

*Jul 2015 – Sep 2015*

- Designed and implemented a distributed application for data processing built on top of Apache Hadoop, Apache HBase, Apache Solr, HornetQ and the Java Spring Framework.

## Singapore Armed Forces

Singapore

*Cyber Security Analyst*

*Apr 2014 – Jun 2015*

- Assisted in the management and conducting of network audits.
- Analysed and correlated audit results to form conclusions regarding the systems' compliance to policies.
- Developed tools in Visual Basic, Bash Scripting and AutoIt to facilitate audit processes.
- Designed and implemented a training infrastructure built on top of Microsoft Hyper-V Server 2012.
- Wrote staff-level technical and non-technical reports on topics that were related to cyber security in general and in relevance to the organisation.

## 3GO LLP

Singapore

*Co-Founder*

*Jul 2012 – Dec 2014*

- Worked with the Land Transport Authority in Singapore to conceptualise and develop a taxi queue management system.
- Architected and developed a web application in Ruby on Rails and an iOS mobile application.

## Nanyang Polytechnic

Singapore

*Development Technologist*

*Apr 2013 – Jul 2013*

- Developed a highly extensible C++ lexical analyser, syntax parser and source code generator in C# for use as the underlying engine in a C++ code obfuscation project.
- Developed an add-in for Microsoft Visual Studio 2012 that implemented various C++ code obfuscation techniques that built on the custom compiler frontend.

## National University of Singapore

Singapore

*Research Assistant*

*Sep 2012 – Dec 2012*

- Explore and research memory management and the page fault mechanism in the Linux operating system and the Xen hypervisor.
- Performed statistical analysis with regression testing on the page fault mechanism in the Xen hypervisor.
- Wrote a paper to analyse the impact of page faults on leveraging SSDs as a cache for virtual memory in the Xen hypervisor for paged memory.

## Centre for Strategic Infocomm Technologies

Singapore

*Intern, Cyber Security Research*

*May 2012 – Sep 2012*

- Developed a plugin for IDA Pro in C++ and Python to facilitate dynamic taint analysis.
- Explored various fuzzing engines such as Radamsa to evaluate their effectiveness.

## InfoSpace Pte Ltd

Singapore

*IT Helpdesk Support*

*Aug 2010 – Dec 2010*

- Maintained and monitored the campus-wide wireless infrastructure at Tanjong Katong Student Hostel.
- Provided support for issues with network connectivity for the students at Tanjong Katong Student Hostel.
- Provided support for general IT enquiries for the staff at Tanjong Katong Student Hostel.

## CERTIFICATES

---

### **Certified Information Systems Security Professional (CISSP)**

*Mar 2023*

*(ISC)<sup>2</sup>*

### **Offensive Security Certified Professional (OSCP)**

*Aug 2016*

*OffSec*

### **Organizational Systems Security Analyst (OSSA)**

*Dec 2018*

*ThinkSECURE Pte Ltd*

## SKILLS

---

**Programming:** Python, Go, Rust, C, C++, Objective-C, Swift, JavaScript, TypeScript, Ruby, PHP

**Cloud:** Amazon Web Services (AWS)

**Systems Administration:** Linux, Windows, Active Directory, Microsoft Exchange

**Technologies:** PostgreSQL, MySQL, Docker, Kubernetes, Ghidra, IDA Pro, WinDbg, GNU Project Debugger (GDB)

**Languages:** English, Mandarin