

# Mark Huasong MENG

Phone: +65 8102 8639  
Home Address: #15-577, Blk 987C, Jusrong West St 93, Singapore 643987  
Email: [huasong.meng@u.nus.edu](mailto:huasong.meng@u.nus.edu) / [menghs@i2r.a-star.edu.sg](mailto:menghs@i2r.a-star.edu.sg)

## Education

---

- 2019 – Present    Doctor of Philosophy in Computer Science  
**National University of Singapore**, Singapore  
Winner of A\*STAR Computing and Information Science Scholarship (2019 – 2023)  
Research Area: Cybersecurity & Trustworthy Artificial Intelligence  
Supervisors: Prof. Jin Song Dong, Dr. Sin Gee Teo, Dr. Guangdong Bai
- 2015 – 2016    Master of Computing in Infocomm Security  
**National University of Singapore**, Singapore  
Graduate with Distinction  
Thesis: “Analysing Use of High Privileges in Android Applications”  
Keywords: Android Security, Reverse Engineering, Program Analysis  
Supervisor: Prof. Jin Song Dong
- 2010 – 2014    Bachelor of Engineering (Hon.) in Computer Science *with* Business Minor  
**Nanyang Technological University**, Singapore  
Graduate with 2<sup>nd</sup> Upper Class Honours  
Winner of SM2 MOE-Industry Joint Scholarship (2008 – 2014)  
Thesis: “Chinese Segmentation in User Generated Content”  
Keywords: Natural Language Processing  
Supervisor: Assoc. Prof. Aixin Sun
- 2013    Summer Exchange Programme  
**University of California, Berkeley**, United States, CA

## Publications

---

- j1 **Huasong Meng**, Vrizlynn L. L. Thing, Yao Cheng, Zhongmin Dai, and Li Zhang, “A Survey of Android Exploits in the Wild,” *Computers & Security*, vol. 76, pp. 71–91, 2018
- j2 **Mark Huasong Meng**, Guangdong Bai, Sin Gee Teo, Zhe Hou, Yan Xiao, Yun Lin, and Jin Song Dong, “Adversarial Robustness of Deep Neural Networks: A Survey from a Formal Verification Perspective,” *IEEE Transactions on Dependable and Secure Computing (Accepted)*
- j3 **Mark Huasong Meng**, Guangdong Bai, Sin Gee Teo, and Jin Song Dong, “Paoding: Supervised Robustness-preserving Data-free Neural Network Pruning,” (*Unpublished*)
- c1 **Mark Huasong Meng** and Yaou Qian, “A Blockchain Aided Metric for Predictive Delivery Performance in Supply Chain Management,” *IEEE International Conference on Service Operations and Logistics, and Informatics (SOLI)*, 2018
- c2 Duc Phong Le, **Huasong Meng**, Le Su, Sze Ling Yeo and Vrizlynn L. L. Thing, “BIFF: A Blockchain-based IoT Forensics Framework with Identity Privacy”, *IEEE Region 10 Conference (TENCON)*, 2018
- c3 Li Zhang, **Huasong Meng** and Vrizlynn L. L. Thing, “Progressive Control Flow Obfuscation for Android Applications”, *IEEE Region 10 Conference (TENCON)*, 2018
- c4 **Mark Huasong Meng**, Guangdong Bai, Joseph K. Liu, Xiapu Luo and Yu Wang, “Analyzing Use of High Privileges on Android: An Empirical Case Study of Screenshot and Screen Recording Applications”, *The 14th International Conference on Information Security and Cryptology (Inscrypt)*, 2018
- c5 Le Su, Yao Cheng, **Huasong Meng**, Vrizlynn Thing, Zhe Wang, Linghe Kong, and Long Cheng, “Securing Intelligent Transportation System: a Blockchain-based Approach with Attack Mitigation,” *The 2nd International conference on Smart Block (SmartBlock)*, 2019
- c6 **Mark Huasong Meng**, Qing Zhang, Guangshuai Xia, Yuwei Zhang, Yanjun Zhang, Guangdong Bai, Zhi Liu, Sin Gee Teo, and Jin Song Dong, “Post-GDPR Threat Hunting on Android Phones: Dissecting OS-level Safeguards of User-unresettable Identifiers,” (*Unpublished*)

## Research Projects

Jul 2020 – Present (ongoing)	<b>Trustworthy Artificial Intelligence / Deep Learning</b> Conduct a survey of robustness verification for deep neural networks. Perform research on security for deep learning and federated learning.
Dec 2020 – Present (ongoing)	<b>Privacy and Security in Android Ecosystem</b> Perform research on OS level safeguard of user unresettable identifiers.
Oct 2016 – Feb 2017	<b>Control Flow Obfuscation for Android Applications</b> Implement the obfuscation theory proposed from previous publications into a comprehensive Android APK transformation solution containing 8 different obfuscation techniques.
Dec 2016 – Jan 2019	<b>EagleEye: Forensic Suite for Android Devices</b> Rewrite the existing laboratory prototype with new functionalities into a web application for demonstration and internal usage.
Dec 2017 – Jul 2018	<b>Blockchain for Digital Assets Tracking</b> Implement an in-house blockchain solution for decentralized digital assets tracking in the industry.
May 2018 – Oct 2018	<b>SecSG1:Securing Last-Mile Communication Systems for Smart Grids</b> Implement the algorithm proposed in previous publications and integrate into the smart grid testbed.
Jan 2019 – Jun 2019	<b>Proxy-Assisted Fine-Grained Encryption of Cloud Data</b> Implement the encryption scheme invented in previous publications and integrate it with a file cloud web application for the demonstration.

## Teaching Assistance

2022 Spring	<b>CS4221/CS5421 Database Applications Design and Tuning (NUS)</b> Duties include tutorial teaching (152 students in 10 groups, 65 hrs), project consultation, and assignments grading.
2022 Spring	<b>IT5006 Fundamentals of Data Analytics (NUS)</b> Duties include assignments design and grading.
2021 Fall	<b>BT5110 Data Management and Warehousing (NUS)</b> Duties include tutorial teaching (119 students in 8 groups, 45 hrs) and assignments grading. <b>Teaching feedback score: 4.6/5.0</b> (CS department average 4.3, school average 4.2).
2021 Spring	<b>CS5232 Formal Specification and Design Techniques (NUS)</b> Duties include project consultation (19 students) and grading.

## Work Experience

Oct 2016 to Present (on leave)	<b>Agency for Science, Technology and Research (A*STAR), Singapore</b> <i>Research Engineer II</i> Cyber-Security (CS) Department, Institute for Infocomm Research (I <sup>2</sup> R) <ul style="list-style-type: none"><li>• Be involved in researching and developing advanced technologies and algorithms for a wide range of research projects.</li><li>• Provide scientific work with technical support within the department.</li><li>• Co-supervise 5 Singapore Polytechnic students' final year projects.</li><li>• Represent the cluster in the software quality control committee of I<sup>2</sup>R.</li><li>• Organize and lead 4 software development training sessions within the institute.</li><li>• Serve as the treasurer of I<sup>2</sup>R Recreational Club Management Committee.</li></ul>
Jul 2016 to Sep 2016	<b>NCS Pte Ltd, Singapore</b> <i>Software Analyst</i> PaC@Gov Team, Ministry of Finance Project Group <ul style="list-style-type: none"><li>• Take charge of post penetration testing remediation for the PaC@Gov platform.</li><li>• Coordinate the development of mobile applications (iOS and Android) with the contractor.</li><li>• Participate in the pre-release testing of mobile applications for the PaC@Gov platform.</li></ul>

<i>Jun 2014 to Jul 2015</i>	<p>Gemalto Pte Ltd, Singapore<sup>1</sup> <i>Software Engineer</i></p> <p>Ezio Mobile SDK Team, R&amp;D Department</p> <ul style="list-style-type: none"> <li>• Serve as a development team member of Gemalto's eBanking product – Ezio Mobile SDK (<i>n.k.a. Mobile Protector</i>).</li> <li>• Focus on stability and security of mobile application development (iOS, Android and Windows Phone).</li> <li>• Work as a Scrum team by applying Agile development methodology.</li> <li>• Test the project by following professional software development process.</li> <li>• Write technical documentation for both internal and external users.</li> </ul>
<i>Jul 2012 to Dec 2012</i>	<p>Autodesk Asia Pte Ltd, Singapore <i>Intern Software Engineer</i></p> <p>DesignScript Team, R&amp;D Department</p> <ul style="list-style-type: none"> <li>• Contribute in design and development of the new programming language: "DesignScript" (<i>n.k.a. Dynamo BIM</i>).</li> <li>• Study and implement the new parser of DesignScript language.</li> <li>• Be involved in pre-release defects fixing work for the new compiler and IDE.</li> </ul>

## Student Activities

---

2013	<p>Microsoft Imagine Cup 2013 – Innovation Challenge Software Developer &amp; UI Designer</p> <ul style="list-style-type: none"> <li>• Represent Nanyang Technological University in Semi-Final Singapore.</li> <li>• Develop an application that enables designers conveniently transfer their ideas into runnable prototypes.</li> </ul>
2021 – Present	<p>Graduate Student Association in Computing (NUS) Management Committee Member</p>
2011 – 2012	<p>NTU Computer Engineering Club Publicity Officer, 12th Management Committee</p>
2010 – 2012	<p>NTU Cultural Activities Club – Wushu Club Honorary General Secretary, 8th Management Committee Publication &amp; Publicity Officer, 7th Management Committee</p>
2011	<p>NTU Students Union – International Undergraduate Committee, China Group Business Manager, Special Project Organizing Committee</p>

## Skills

---

Programming	<p>Proficient in Java, C/C++ and Python Full Stack Web Development (NodeJS and Django) Mobile Development on Android (<i>since 2014</i>), iOS (<i>since 2014</i>) and Windows Phone (<i>since 2012</i>) Working experience in C, R, JSP and SQL</p>
Software Management	<p>Adobe Software (Photoshop, Lightroom, etc), Microsoft Office Scrum development methodology</p>

## Languages

---

Proficient in English and Chinese Mandarin  
Conversational in Cantonese  
Elementary in Malay

## Interests

---

Photography, Travel, Cooking, Religion and History

---

<sup>1</sup>Now known as Thales Technologies Pte Ltd