NG TIONG SIK (황충식)

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WORKING EXPERIENCES

Research and Development Engineer

Recogine Technology Sdn. Bhd.

Mar 2019 – Aug 2019 Subang Jaya, Selangor

- Worked on vehicle classification using TensorFlow and Keras. Helped train and test license plate recognition (LPR) models and created scripts for preparing datasets and analyzing model performance.

Application Engineer

Hitachi Hokenso Sdn. Bhd.

Sep 2017 – Dec 2017 Petaling Jaya, Selangor

- Worked as a back-end developer using the Java Spring Framework, handling debugging and server deployment with Oracle WebLogic Server. Created reports utilizing Jasper Framework and SQL stored procedures.

Research Assistant

Multimedia University

Sep 2016 – Aug 2017 Ayer Keroh, Melaka

- Served as a research assistant, focusing on cryptographic digital signatures and security proofs, analyzing signature schemes to enhance their security through tight reduction techniques.

Technical Assistant (Internship)

NetEon Sdn. Bhd.

Mar 2015 – May 2015 Bandar Sunway, Selangor

- Learnt interfacing computer hardware for industrial purposes, such as soldering and adding components in circuit boards and also configuring radio antennas.

EDUCATION

Doctorate in Engineering

Title: On the Realization of Conditional Periocular-Face Biometrics for Flexible Deployment

2020–2025 Yonsei University

Master of Science in Information Technology

Title: Design of Tight Security Reduction for Signature Schemes

2016–2019 Multimedia University

Bachelor of Engineering (Hons.) Electronics Majoring in Computer

Title: Secure Digital Medical Certificate System: Identity-Based Signatures

2011–2016 Multimedia University

LANGUAGES

English
Bahasa Melayu
Mandarin

TOEIC (Dec 2022): 970/990.
TOEFL (Jul 2018): 96/120.

SKILLS

Development: PyTorch Docker TensorFlow

Programming: Python Android Java Java SE .NET C++

Scripting: TeX MySQL HTML & CSS PHP Linux Shell

OS: Windows Linux Ubuntu Android Windows Phone

OTHERS

- Registered Graduate Engineer under Board of Engineers Malaysia (BEM) (GE158045A).

AWARDS

- **Scholarship (현대차 정몽구 장학금):** Hyundai Motor Company Chung Mong-koo Foundation (*March 2020 – February 2024*).
- **National Trusted Cryptographic Algorithm List Proposal (MySEAL):** 'Malaysian Digital Signature Algorithm Proposal: TNC Signature Scheme' (*Finalist*).
- **International Invention and Innovation Exhibition 2016 (ITEX 2016):** 'An Online Digital Medical Certificate System Using Identity-Based Signature' (*Gold*).

NOTABLE PROJECTS

NRF Project (S. Korea): Multimodal Biometrics Conditioning and Data-driven Template Hashing (Member – Ph.D. Researcher)

- Researched advanced facial and periocular based recognition techniques using AI. Worked on improving security by protecting biometric data with special encryption methods. Developed innovative methods to recognize faces even when partially covered by masks or sunglasses.

Malaysian Digital Signature Algorithm Proposal (MySEAL): TNC Signature Scheme (Member – Finalist)

- Proposed the TNC Signature, compatible with Schnorr signatures, providing full security proof and implementation using C and Libgcrypt for both discrete logarithm and elliptic curve settings.

FRGS Project (Malaysia): Tight Security Reduction Techniques for Cryptography Primitives (Member – Master Researcher)

- Studied the effectiveness and techniques of security reduction in cryptographic schemes. Applied security reduction methods to enhance the security of existing digital signature schemes.

ITEX Exhibition 2016: An Online Digital Medical Certificate System Using Identity-Based Signature (Member)

- Implemented Cha-Cheon' s IBS and ECC-based ElGamal encryption using Java Applet, integrating QR code-based digital signature generation on Android with web server verification.

PUBLICATIONS

Journal Articles

- Ng, T.-S., & Teoh, A. B. J. (2025). Attention-aware ensemble learning for face-periocular cross-modality matching. *Applied Soft Computing*, *175*, 113044. doi:https://doi.org/10.1016/j.asoc.2025.113044
- Tiong-Sik, Kim, J., & Teoh, A. B. J. (2025). Flexible secure biometrics: A protected modality-invariant face-periocular recognition system. *IEEE Transactions on Information Forensics and Security*, 1–1. doi:10.1109/TIFS.2025.3559785
- Ng, T.-S., Chai, J. C. L., Low, C.-Y., & Beng Jin Teoh, A. (2024). Self-attentive contrastive learning for conditioned periocular and face biometrics. *IEEE Transactions on Information Forensics and Security*, *19*, 3251–3264. doi:10.1109/TIFS.2024.3361216
- Ng, T.-S., Low, C.-Y., Chai, J. C. L., & Teoh, A. B. J. (2023). On the representation learning of conditional biometrics for flexible deployment. *IEEE Access*, *11*, 82338–82350. doi:10.1109/ACCESS.2023.3301150

Conference Proceedings

- Ng, T.-S., Low, C.-Y., Long Chai, J. C., & Beng Jin Teoh, A. (2022). Conditional multimodal biometrics embedding learning for periocular and face in the wild. In *2022 26th international conference on pattern recognition (icpr)* (pp. 812–818). doi:10.1109/ICPR56361.2022.9956636
- Ng, T.-S., Tan, S.-Y., & Chin, J.-J. (2019). Improving signature schemes with tight security reductions. In S.-H. Heng & J. Lopez (Eds.), *Information security practice and experience* (pp. 273–292). Cham: Springer International Publishing.
- Ng, T.-S., Tan, S.-Y., & Chin, J.-J. (2018). A variant of bls signature scheme with tight security reduction. In J. Hu, I. Khalil, Z. Tari, & S. Wen (Eds.), *Mobile networks and management* (pp. 150–163). Cham: Springer International Publishing.
- Ng, T.-S., Tan, S.-Y., & Chin, J.-J. (2017). A variant of schnorr signature scheme with tight security reduction. In *2017 international conference on information and communication technology convergence (ictc)* (pp. 411–415). doi:10.1109/ICTC.2017.8191014