PERSONAL DATA



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PUBLICATIONS SUMMARY

6	21	3
International Journal	International. Proceedings	Research Grants

Total Publications: 30

EDUCATION

Ph.D. Degree	2019	University of California, Irvine
Master Degree	2015	University of California, Irvine
Bachelor Degree	2013	University of Michigan -- Ann Arbor

RESEARCH INTERESTS

Embedded Systems Security

Machine Learning Systems Security

Software Systems Security

RESEARCH PROJECTS

1. Embedded Systems and IoT Security

2. ML/AI Security
3. Binary Analysis

TEACHING

977-221 Module: Network and Security
977-330 Trusted Computing
977-210 Object-Oriented Programming

MSc/PhD STUDENTS

1. Amarin Laohajirapan, M.Sc., 2024-present
2. Raned Chuphueak, M.Sc., 2024-present

INTERNATIONAL JOURNAL ARTICLES

Norrathep Rattanavipanon, and Ivan De Oliveira Nunes. "SLAPP: Poisoning Prevention in Federated Learning and Differential Privacy via Stateful Proofs of Execution." *IEEE Transactions on Information Forensics and Security* (2025).

3/2025

Rattanavipanon, Norrathep, Jakapan Suaboot, and Warodom Werapun. "A Toolchain for Assisting Migration of Software Executables Towards Post-Quantum Cryptography." *IEEE Access* (2024).

1/2025

Ivan De Oliveira Nunes, Sashidhar Jakkamsetti, Norrathep Rattanavipanon, and Gene Tsudik, Towards remotely verifiable software integrity in resource-constrained IoT devices, IEEE Communications Magazine, Volume 62, Issue 7, 2024.

https://ieeexplore.ieee.org/document/10400394

7/2024

Norrathep Rattanavipanon, Donlapark Ponnoprat, Hideya Ochiai, Kuljaree Tantayakul, Touchai Angchuan, and Sinchai Kamolphiwong, Detecting Anomalous LAN Activities under Differential Privacy, Hindawi Security and Communication Networks, 2022.

https://doi.org/10.1155/2022/1403200

4/2022

N. Asokan, Thomas Nyman, *Norrathep Rattanavipanon*, Ahmad-Reza Sadeghi, and Gene Tsudik, ASSURED: Architecture for Secure Software Update of Realistic Embedded Devices, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Volume 37, Issue 11, 2018.

https://ieeexplore.ieee.org/document/8493602

11/2018

Xavier Carpent, Norrathep Rattanavipanon, and Gene Tsudik. Remote Attestation via Self-Measurement, ACM Transactions on Design Automation of Electronic Systems (TODAES), Volume 24, Issue 1, 2018.

https://dl.acm.org/doi/abs/10.1145/3279950

1/2018

INTERNATIONAL PROCEEDINGS

Adam Caulfield, Norrathep Rattanavipanon, and Ivan De Oliveira Nunes, Run-time Attestation and Auditing: The Verifier's Perspective, ACM WiSec, 2025. *https://dl.acm.org/doi/10.1145/3734477.3734710*

6/2025

Antonio Joia Neto, Norrathep Rattanavipanon, and Ivan De Oliveira Nunes, PEARTS: Provable Execution in Real-Time Embedded Systems, IEEE S&P, 2025. https://www.computer.org/csdl/proceedings-article/sp/2025/223600a047/21B7QzkFmY8

5/2025

Nasrin Sohrabi, Norrathep Rattanavipanon, and Zahir Tari, A Query Language to Enhance Security and Privacy of Blockchain as a Service (BaaS), ICSOC, 2024.

12/2024

Adam Caulfield, Antonio Joia Neto, Norrathep Rattanavipanon, and Ivan De Oliveira Nunes, TRACES: TEE-based Runtime Auditing for Commodity Embedded Systems, ACSAC, 2024

12/2024

Ivan De Oliveira Nunes, Seoyeon Hwang, Sashidhar Jakkamsetti, Norrathep Rattanavipanon, and Gene Tsudik, PARseL: Towards a Verified Root-of-Trust over seL4*, ICCAD, 2023.*

11/2023

Nattawat Songsom, Warodom Werapun, Jakapan Suaboot, and Norrathep Rattanavipanon, The SWC-based Security Analysis Tool for Smart Contract Vulnerability Detection, INCIT, 2022.

10/2022

Adam Caulfield, Norrathep Rattanavipanon, and Ivan De Oliveira Nunes, ASAP: Reconciling Asynchronous Real-Time Operations and Proofs of Execution in Simple Embedded Systems, DAC, 2022.

https://doi.org/10.1145/3489517.3530550

7/2022

Ivan De Oliveira Nunes, Sashidhar Jakkamsetti, Norrathep Rattanavipanon, and Gene Tsudik, On the TOCTOU Problem in Remote Attestation, CCS, 2021.

11/2021

Norrathep Rattanavipanon, Donlapark Ponnoprat, Hideya Ochiai, Kuljaree Tantayakul, Touchai Angchuan, and Sinchai Kamolphiwong, Releasing ARP Data with Differential Privacy Guarantees For LAN Anomaly Detection, ECTI-CON 2021.

5/2021

Karim Eldefrawy, Michael Locasto, *Norrathep Rattanavipanon*, and Hassen Saidi, Towards Automated Augmentation and Instrumentation of Legacy Cryptographic Executables, Applied Cryptography and Network Security (ACNS), 2020.

10/2020

Ivan De Oliveira Nunes, Karim Eldefrawy, *Norrathep Rattanavipanon*, and Gene Tsudik, APEX: A Verified Architecture for Proofs of Execution on Remote Devices Under Full Software Compromise, USENIX Security, 2020.

8/2020

Ivan De Oliveira Nunes, Karim Eldefrawy, *Norrathep Rattanavipanon*, and Gene Tsudik, PURE: Using Verified Remote Attestation to Obtain Proofs of Update, Reset and Erasure in Low-End Embedded Systems, IEEE/ACM ICCAD, 2019.

10/2019

Ivan De Oliveira Nunes, Karim Eldefrawy, *Norrathep Rattanavipanon*, Michael Steiner, and Gene Tsudik, VRASED: A Verified Hardware/Software Co-Design for Remote Attestation, in USENIX Security, 2019.

8/2019

Ivan De Oliveira Nunes, Ghada Dessouky, Ahmad Ibrahim, *Norrathep Rattanavipanon*, Ahmad-Reza Sadeghi and Gene Tsudik, Towards Systematic Design of Collective Remote Attestation Protocols IEEE ICDCS, 2019.

6/2019

N. Asokan, Thomas Nyman, *Norrathep Rattanavipanon*, Ahmad-Reza Sadeghi, and Gene Tsudik, ASSURED: Architecture for Secure Software Update of Realistic Embedded Devices, EMSOFT, 2018.

8/2018

Xavier Carpent, Karim Eldefrawy, *Norrathep Rattanavipanon*, Ahmad-Reza Sadeghi, and Gene Tsudik, Invited:

Reconciling Remote Attestation and Safety-Critical Operation on Simple IoT Devices, DAC, 2018.

8/2018

Xavier Carpent, Karim Eldefrawy, *Norrathep Rattanavipanon*, and Gene Tsudik, Temporal Consistency of Integrity-Ensuring Computations and Applications to Embedded Systems Security, ACM ASIACCS, 2018.

5/2018

Xavier Carpent, *Norrathep Rattanavipanon*, and Gene Tsudik, Remote Attestation of IoT Devices via SMARM: Shuffled Measurements Against Roving Malware, IEEE HOST, 2018.

4/2018

Xavier Carpent, *Norrathep Rattanavipanon*, and Gene Tsudik, ERASMUS: Efficient Remote Attestation via Self-Measurement for Unattended Settings, DATE, 2018.

4/2018

Karim ElDefrawy, *Norrathep Rattanavipanon* and Gene Tsudik, HYDRA: HYbrid Design for Remote Attestation (Using a Formally Verified Microkernel), ACM WiSEC 2017.

10/2017

Xavier Carpent, Karim ElDefrawy, *Norrathep Rattanavipanon*, and Gene Tsudik, LIghtweight Swarm Attestation: A Tale of Two LISAs, ACM ASIACCS, 2017.

4/2017

RESEARCH GRANTS

การตรวจจับซอฟต์แวร์ไบนารีที่เสี่ยงต่อการถูกโจมตีด้วยควอนตัมคอมพิวเตอร์: 599,060 baht funded by เงินงบประมาณแผ่นดิน, 2025

2025

การป้องกันการโจมตีแบบ Poisoning Attacks ในระบบ IoT แบบกระจายศูนย์: 281,580 baht funded by หน่วยบริหารและจัดการทุนด้านการพัฒนากำลังคน และทุนด้านการพัฒนาสถาบันอุดมศึกษา การวิจัยและการสร้างนวัตกรรม (บพค.), 2025

2025

Securing Remote Attestation Against Time-of-Check Time-of-Use (TOCTOU) Attacks in Embedded/IoT Devices (การป้องกันปัญหา TOCTOU ในระบบการยืนยันระยะไกลของอุปกรณ์ฝังตัว)
: 250,000 baht funded by Young Research Grant (ทุนนักวิจัยใหม่ ว.ท.), 2021

2021

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