

CONTACT INFORMATION	<p>National Institute of Informatics 2-1-2 Hitotsubashi Chiyoda-ku Tokyo-to 101-8430 Japan</p> <p>E-mail: kphalakarn@nii.ac.jp kittiphon.phalakarn@gmail.com Website: https://kittiphonp.github.io/</p>
RESEARCH INTERESTS	<ul style="list-style-type: none"> • <i>Probabilistic model checking</i>: quantitative properties of Markov models and games • <i>Lattice theory and fixed point computation</i>: value iteration, fixed point uniqueness • <i>Algorithm design and analysis</i>: graph-based algorithms
EDUCATION	<p>University of Waterloo, Ontario, Canada Ph.D., Electrical and Computer Engineering, 2019–2023</p> <p>Chulalongkorn University, Bangkok, Thailand M.Eng., Computer Engineering, 2017–2019 B.Eng., Computer Engineering (First Class Honors), 2013–2017</p>
HONORS AND AWARDS	<p>Best Paper Award, ICTAC 2024</p> <p>University of Waterloo Faculty of Engineering Graduate Scholarship, 2023</p> <p>Ripple Graduate Fellowship, 2019–2023</p> <p>Chulalongkorn University Department of Computer Engineering Graduate Fellowship, 2017–2019</p> <p>Chulalongkorn University Faculty of Engineering Gold Medal of Excellence, 2017</p> <p>Outstanding Academic Performance Award, Engineering Institute of Thailand, 2016</p> <p>First Solution Award, ACM-ICPC World Finals 2016</p>
ACADEMIC EXPERIENCE	<p>National Institute of Informatics, Tokyo, Japan <i>Researcher</i>, Research Center for Mathematical Trust in Software and Systems (09.2023–present) <i>Research Intern</i>, ERATO Metamathematics for Systems Design Project (03.2019–08.2019)</p> <p>RWTH Aachen University, Aachen, Germany <i>Visiting Researcher</i>, Software Modeling and Verification Group (10.2025)</p> <p>The University of Tokyo, Tokyo, Japan <i>Research Intern</i>, Imai Laboratory, Department of Computer Science (06.2016–07.2016)</p>
TEACHING EXPERIENCE	<p>University of Waterloo, Ontario, Canada <i>Teaching Assistant</i></p> <ul style="list-style-type: none"> • ECE 606 Algorithm Design and Analysis: Fall 2020 • ECE 124 Digital Circuits and Systems: Spring 2020 <p>Chulalongkorn University, Bangkok, Thailand <i>Teaching Assistant</i></p> <ul style="list-style-type: none"> • 2110201 Computer Engineering Mathematics (Linear Algebra): Winter 2019 • 2110202 Discrete Structures and Computability (Discrete Mathematics): Fall 2018 • 2110101 Computer Programming: Winter 2015, Fall 2016, Winter 2017, Spring 2017, Fall 2017, Winter 2018, Spring 2018

K. Phalakarn, S. Pruekprasert, and I. Hasuo. “Strategy Templates for Almost-Sure and Positive Winning of Stochastic Parity Games towards Permissive and Resilient Control,” *Theoretical Computer Science (TCS)*, vol. 1057, no. 115535, 2025, pp. 1–15.

K. Phalakarn, Y.C. Tsai, and I. Hasuo. “Widest Path Games and Maximality Inheritance in Bounded Value Iteration for Stochastic Games,” *Proc. of the 23rd International Symposium on Automated Technology for Verification and Analysis (ATVA 2025)*, pp. 109–131.

Y.C. Tsai, **K. Phalakarn**, S. Akshay, and I. Hasuo. “Chance and Mass Interpretations of Probabilities in Markov Decision Processes,” *Proc. of the 36th International Conference on Concurrency Theory (CONCUR 2025)*, pp. 33:1–33:19.

K. Phalakarn, S. Pruekprasert, and I. Hasuo. “Winning Strategy Templates for Stochastic Parity Games Towards Permissive and Resilient Control,” *Proc. of the 21st International Colloquium on Theoretical Aspects of Computing (ICTAC 2024)*, pp. 197–214.

K. Phalakarn, V. Suppakitpaisarn, F. Rodríguez-Henríquez, and M. A. Hasan. “Vectorized and Parallel Computation of Large Smooth-Degree Isogenies using Precedence-Constrained Scheduling,” *IACR Trans. on Cryptographic Hardware and Embedded Systems (TCHES)*, vol. 2023, issue 3, pp. 246–269.

K. Phalakarn, V. Suppakitpaisarn, and M. A. Hasan. “Speeding-Up Parallel Computation of Large Smooth-Degree Isogeny Using Precedence-Constrained Scheduling,” *Proc. of the 27th Australasian Conference on Information Security and Privacy (ACISP 2022)*, pp. 309–331.

K. Phalakarn, V. Suppakitpaisarn, and M. A. Hasan. “Single-round Lattice-based Multisignatures,” *Proc. of the 8th International Workshop on Information and Communication Security (WICS 2021)*, pp. 365–371.

K. Phalakarn, T. Takisaka, T. Haas, and I. Hasuo. “Widest Paths and Global Propagation in Bounded Value Iteration for Stochastic Games,” *Proc. of the 32nd International Conference on Computer Aided Verification (CAV 2020)*, pp. 349–371.

K. Phalakarn, K. Phalakarn, and V. Suppakitpaisarn. “Optimal Representation for Right-to-Left Parallel Scalar and Multi-Scalar Point Multiplication,” *International Journal of Networking and Computing (IJNC)*, vol. 8, no. 2, 2018, pp. 166–185.

K. Phalakarn, and A. Surarerks. “A Matrix Decomposition Method for Odd-Type Gaussian Normal Basis Multiplication,” *Proc. of the 3rd International Conference on Computer and Communication Systems (ICCCS 2018)*, pp. 99–103.

K. Phalakarn, K. Phalakarn, and V. Suppakitpaisarn. “Optimal Representation for Right-to-Left Parallel Scalar Point Multiplication,” *Proc. of the 4th International Workshop on Information and Communication Security (WICS 2017)*, pp. 482–488.

K. Phalakarn, and A. Surarerks. “An Analysis of Computer Programs using λ -calculus,” *Proc. of the 7th International Workshop on Computer Science and Engineering (WCSE 2017)*, pp. 214–218.

K. Phalakarn, **K. Phalakarn**, and V. Suppakitpaisarn. “Parallelized Side-Channel Attack Resisted Scalar Multiplication Using q -Based Addition-Subtraction k -chains,” *Proc. of the 4th International Symposium on Computing and Networking (CANDAR 2016)*, pp. 140–146.

PATENTS	K. Phalakarn , T. Takisaka, T. Haas, and I. Hasuo. “System Optimal Control Device, System Optimal Control Method, and Program,” U.S. Patent 12 360 519, July 15, 2025.
OTHER PUBLICATIONS	K. Phalakarn , K. Phalakarn, S. Prasitjutrakul, and S. Sinthupinyo. “Python 101,” Textbook for 2110101 Computer Programming course (in Thai), 2017.
PROFESSIONAL SERVICES	<ul style="list-style-type: none"> • Reviewer: ATVA 2023 • Artifact Reviewer: VMCAI 2026 • Session Chair: ATVA 2025
SKILLS	<ul style="list-style-type: none"> • Programming Languages: Python, C/C++, Java; some experiences with PRISM model checker, R, VHDL, Verilog, OpenMP API for parallel programming. • Languages: Thai (native), English (fluent), Japanese (beginner).