

NATNATEE DOKMAI

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EDUCATION

Indiana University, Bloomington

Ph.D. *June 2023*

Major: Computer Science

Minors: Informatics, Geography

Dissertation: “Privacy-Enhancing Technologies as Infrastructure”

University of Virginia

B.A. *May 2015*

Majors: Computer Science, Mathematics

RESEARCH INTERESTS

Cryptography, Security & Privacy, Bioinformatics, Science & Technology Studies (STS)

PROFESSIONAL APPOINTMENTS

CMKL University

Assistant Professor

August 2025 – *Current*

Bangkok, Thailand

Yale School of Medicine

Postdoctoral Associate

September 2023 – June 2025

New Haven, CT, USA

Department of Biomedical Informatics and Data Science

Broad Institute of MIT and Harvard

Visiting Graduate Student/Postdoctoral Associate

September 2020 – August 2023

Cambridge, MA, USA

Cho Lab, Data Sciences Platform

Indiana University, Bloomington

Graduate Research Assistant

August 2015 – June 2023

Bloomington, IN, USA

Department of Computer Science

University of California San Diego School of Medicine

Intern

June 2015 – August 2015

La Jolla, CA, USA

iDASH Project (Integrating Data for Analysis, Anonymization and SHaring)

PEER-REVIEWED PUBLICATIONS

Dokmai, N. (2026). Rethinking privacy-preserving GWAS benchmarks for governance. *Nature Computational Science*, to appear in July 2026.

Dokmai, N., Zhu, K., Sahinalp, S. C., & Cho, H. (2025). Secure phasing of private genomes in a trusted execution environment with TX-Phase. *Genome Research*, 35(12), 2626.

Xu, J., Zhu, K., Cai, J., Kockan, C., **Dokmai, N.**, Cho, H., Woodruff, D.P. & Sahinalp, S. C. (2025). Learning-augmented sketching offers improved performance for privacy preserving and secure GWAS. *Iscience*, 28(3).

Cho, H., Froelicher, D., **Dokmai, N.**, Nandi, A., Sadhuka, S., Hong, M. M., & Berger, B. (2024). “Privacy-Enhancing Technologies in Biomedical Data Science”. *Annual Review of Biomedical Data Science*, 7(1), 317-343.

Dokmai, N., Kockan, C., Zhu, K., Wang, X., Sahinalp, S. C., & Cho, H. (2021). “Privacy-preserving genotype imputation in a Trusted Execution Environment”. *Cell Systems*, 12(10), 983-993.

Kockan, C., Zhu, K., **Dokmai, N.**, Karpov, N., Kulekci, M. O., Woodruff, D. P., & Sahinalp, S. C. (2020). “Sketching Algorithms for Genomic Data Analysis and Querying in a Secure Enclave”. *Nature Methods*, 17(3), 295-301.

PREPRINTS

Dokmai, N., Camp, L. J., & Henry, R. (2022). “Assisted Private Information Retrieval”. *Cryptology ePrint Archive*.

INVITED TALKS & PANELS

“Privacy-Preserving Algorithms for Secure Genome Analysis in Trusted Execution Environments”, Workshop on Social, Technical, and Ethical Challenges in Biomedical Data Privacy, Pacific Symposium on Bio-computing (PSB) 2022, January 2022.

CONFERENCE PRESENTATIONS

“TX-Phase: Secure Phasing of Private Genomes in a Trusted Execution Environment”, 29th International Conference On Research In Computational Molecular Biology (RECOMB), April 2025.

“Towards the Deployment of Secure Computation Tools in Genomics: A Sociotechnical Perspective”, 2023 USENIX Conference on Privacy Engineering Practice and Respect (PEPR '23), September 2023.

“Privacy-Preserving Genotype Imputation in a Trusted Execution Environment”, 25th International Conference On Research In Computational Molecular Biology (RECOMB), August 2021.

“Inclusive Secure Information System for Community-Based ID Card Programs”, Work-In-Progress Session, 2018 Annual Computer Security Applications Conference (ACSAC), December 2018.

“Toward Critical Security and Cryptography”, Work-In-Progress Session, 2018 Annual Computer Security Applications Conference (ACSAC), December 2018.

SCHOLARSHIPS & AWARDS

Royal Thai Scholarship, Royal Thai Government August 2007 – June 2025
Recipient of a full-ride scholarship from the Development and Promotion of Science and Technology Talents (DPST) Project, covering education from high school through to the completion of a PhD

Second Place, iDASH Security & Privacy Workshop 2019 October 2019
Secure genome analysis competition in Track 3: Privacy-preserving Machine Learning as a Service on SGX

Second Place, iDASH Security & Privacy Workshop 2017 October 2017
Secure genome analysis competition in Track 2: Software Guard Extension (SGX) based whole genome variants search

TEACHING

CMKL University	Bangkok, Thailand
SEC 203: Securing System Infrastructure	<i>Spring 2026</i>
SEC 206: Practical Cryptography for Secure Applications	<i>Spring 2026</i>
SEN 301: Designing and Building Secure Software	<i>Spring 2026</i>
SEC 302: Robustness of AI Components and Systems	<i>Fall 2025</i>
SEC 303: Vulnerability Assessment for Software Applications	<i>Fall 2025</i>

PROFESSIONAL SERVICE

Program Committees

International Conference on Intelligent Systems for Molecular Biology (ISMB), 2026

Peer Reviews

Annual International Conference on Research in Computational Molecular Biology (RECOMB), 2024–2026

International Conference on Intelligent Systems for Molecular Biology (ISMB), 2025

Nature Computational Science