

# Jaturong Kongmanee

PHD CANDIDATE · HUMAN-AI INTERACTION, INTERACTIVE MACHINE LEARNING, INTERACTIVE MODEL TRAINING AND DATA LABELING

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## Research

- My research studies the development of interactive machine learning (iML) approaches for effective and efficient ML/AI model training and data labeling process. The main theme of my research is to enhance active learning framework by developing an interactive mechanism that (1) takes into account human differences (e.g., human skills and/or perception, and at different times), and (2) improves the motivation and enjoyment, which has fundamentally been missing, for humans for carrying out the potential tedious model training and labeling task.

## Education

### University of Toronto

PH.D., MECHANICAL & INDUSTRIAL ENGINEERING

- Advisor: Professor Mark H. Chignell

Toronto, CA

Sep 2022 - present

### Texas Tech University

M.S., COMPUTER SCIENCE

- Thesis: Securing Smart Contracts in Blockchain, Advisor: Professor Rattikorn Hewett

Texas, USA

Sep 2018 - May 2020

### King Mongkut's University of Technology Thonburi

B.S., CLASS VALEDICTORIAN, COMPUTER SCIENCE

Bangkok, Thailand

June 2012 – June 2015

## Professional Background

### Sun Life Canada

DATA SCIENCE AND MACHINE LEARNING INTERN

Toronto, Canada

Sep 22 - Sep 24

### SCB 10X

LLMs AND MACHINE LEARNING SCIENTIST (REMOTE)

Bangkok, Thailand

May 24 - Sep 24

### Agoda Services Co., Ltd.(Priceline group)

FULL-STACK SOFTWARE ENGINEER

Bangkok, Thailand

Feb 2016 - Apr 2018

### Thomson Reuters

SOFTWARE ENGINEER INTERN

Bangkok, Thailand

Jun 2015 - Jul 2015

### Microsoft Thailand

LEAD SOFTWARE DEVELOPER: MICROSOFT STUDENT PARTNER

Bangkok, Thailand

Jan 2014 - Dec 2014

## Publications

### Published

**Kongmanee, J.**, Chung, M. H. M., Luna, A., Zhan, L., Jerath, K., Raman, A., & Chignell, M. H. (2024, May). A Human-AI Interaction Dashboard for Detecting Potentially Malicious Emails. In 2024 IEEE 4th International Conference on Human-Machine Systems (ICHMS) (pp. 1-6). IEEE.

Chung, M. H. M., Li, S., **Kongmanee, J.**, Wang, L., Yang, Y., Giang, C., ... & Chignell, M. (2024). Maximizing Information Gain in Privacy-Aware Active Learning of Email Anomalies. arXiv preprint arXiv:2405.07440.

**Kongmanee, J.**, Thanapattheerakul, T., & Chignell, M. (2023, December). Dual-Stage OOD Detection Learning with an Unsupervised Start. In Proceedings of the 13th International Conference on Advances in Information Technology (pp. 1-7).

**Kongmanee, J.**, Chignell, M., Jerath, K., & Raman, A. (2023). Unsupervised Learning of Distributional Properties can Supplement Human Labeling and Increase Active Learning Efficiency in Anomaly Detection. arXiv preprint arXiv:2307.08782.

Suresh, A., **Kongmanee, J.**, Deb, K., & Boddeti, V. N. (2021, June). Multi-objective Coevolution and Decision-making for Cooperative and Competitive Environments. In 2021 IEEE Congress on Evolutionary Computation (CEC) (pp. 1601-1608). IEEE.

**Kongmanee, J.**, & Thanapattheerakul, T. (2020, November). Fine-tuning a lightweight convolutional neural networks for COVID-19 diagnosis. In CSBio'20: Proceedings of the Eleventh International Conference on Computational Systems-Biology and Bioinformatics (pp. 101-103).

**Kongmanee, J.**, Kijsanayothin, P., & Hewett, R. (2019, November). Securing smart contracts in blockchain. In 2019 34th IEEEACM International Conference on Automated Software Engineering Workshop (ASEW) (pp. 69-76). IEEE.

Thanapattheerakul, T., **Kongmanee, J.**, & Chan, J. H. (2017, August). Network-based visualization tool for analyzing gene expression data. In Proceedings of the 10th International Symposium on Visual Information Communication and Interaction (pp. 77-78).

**Kongmanee, J.**, Thanapattheerakul, T., & Chan, J. H. (2016, December). Parallel Affinity Propagation Clustering in Identifying Sub-Network Biomarker Genes of Lung Cancer. In Proceedings of the 7th International Conference on Computational Systems-Biology and Bioinformatics (pp. 19-23).

### **Under Review**

A Simplified and More Efficient Semi-Supervised Training Procedure for OOD Detection. *IEEE Transactions on Pattern Analysis and Machine Intelligence*

Unsupervised Early Sampling Helps Focus Human Expertise in Active Learning of Anomalies. *Pattern Recognition*

## Awards, Scholarship & Fellowships

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2022 - 2024 **Mitacs Accelerate Fellowship**, University of Toronto

2023 - 2024 **NSERC Discovery Fellowship**, University of Toronto

2023 **ML Safety Prize**, Center for AI Safety

2021 - 2022 **Facebook Research Award**, Michigan State University

2021 - 2022 **Graduate Teaching Assistant**, Michigan State University

2018 - 2019 **AT&T Chancellor's Graduate Fellowship**, Texas Tech University

2016 **Winner at The Eighteenth National Software Contest**, Thailand's National Electronics and Computer Technology Center (NECTEC)

2016 **Class Valedictorian**, King Mongkut's University of Technology Thonburi

2012 - 2015 **Outstanding Academic Performance Scholarship**, King Mongkut's University of Technology Thonburi

2014 **Undergraduate Research Assistant**, Tokyo University of Agriculture and Technology

## Presentations

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### **Invited Talks**

Fall 2023. *Fundamental Challenges in Applying ML to Data Exfiltration Detection*. CMKL University, Bangkok, Thailand.

## Teaching Experience

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Summer 22 **CSE331: Algorithms and Data Structures**, Michigan State University

Spring 22 **CSE477: Web App Development**, Michigan State University

Fall 21 **CSE891: Computational Foundations of AI and ML**, Michigan State University

Fall 19 **CS5383: Theory of Automata**, Texas Tech University

## Outreach & Professional Development

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### **SERVICE AND OUTREACH**

2018 - 2023 **Deep Learning and Artificial Intelligence Summer/Winter School**, Organizing Committee