

# Chaiyong Ragkhitwetsagul

## Address

Faculty of ICT  
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## Research Interests

Software Engineering, Static Software Analysis, Code Clone Detection, Mining Software Repositories, Software Testing

## Professional Experience

Lecturer, Faculty of ICT, since December 2012  
Assistant Dean of the Academic Administration, October 2018 – October 2020  
Mahidol University  
Thailand

System Analyst, 2009 – 2012  
National Economic and Social Development Board  
Thailand

Software Test Engineer, 2006 – 2007  
Microsoft (Thailand)  
Thailand

## Education

Doctor of Philosophy (Computer Science – Software Engineering)  
Department of Computer Science , University College London, UK, October 2018

Master of Science in IT – Very Large Information Systems  
Carnegie Mellon University, USA, December 2008

Bachelor of Engineering, Department of Computer Engineering (Magna cum Laude)  
Kasetsart University, Thailand, March 2006

## Selected Honors

- Recipient of the Scholarships for Ph.D. Students 2022 from Mahidol University, 24 March 2022.
- Recipient of the Research Grant for New Scholars (RGNS) for 2 years from the Ministry of Higher Education Science Research and Innovation (MHESRI) on the topic of "Code similarity applications for improving software quality.", 9 November 2021.
- Honorable mention for the Learning Innovation for Online Courses Awards in the category "Online Engagement and Motivation Techniques, Innovations and Learning

Models" for Using Virtual Reality for Project Presentation (ITCS431 Software Design and Development), 3 July 2021.

- PhD Thesis Awards, National Research Awards 2020, National Research Council of Thailand, 16 November 2020.
- The Best Tool Demo Award, 36<sup>th</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME 2020) - Tool Demo, Adelaide, Australia (Virtual Event), 2020.
- The People's Choice Award (best presentation), 12<sup>th</sup> International Workshop on Software Clones, Campobasso, Italy, 2018.
- The People's Choice Award (best presentation), 11<sup>th</sup> International Workshop on Software Clones, Klagenfurt, Austria, 2017.
- Full PhD scholarship, Mahidol University, 2014.
- Full Master's degree scholarship, The Royal Thai Government, 2007.
- Winner of the 8<sup>th</sup> National Software Contest of Thailand (NSC) – Software for Entertainment, 2006.

### **Selected Professional Services**

*Reviewer of software engineering journals:*

- Empirical Software Engineering (EMSE)
- Journal of Systems and Software (JSS)
- IEEE Access
- Science of Computer Programming

*Organizing committee of international conferences and workshops:*

*2020*

- Diversity, Inclusion and Outreach Co-Chair of the 2022 Mining Software Repositories Conference (MSR 2022).

*2021*

- Program co-chair, Early Research Achievement (ERA) track of the 29<sup>th</sup> IEEE/ACM International Conference on Program Comprehension (ICPC 2021).
- Guest Editors (with Hitesh Sajnani) for the Journal of Systems and Software: Special Issue on Software Clones.

*2020*

- Judge for the ACM Student Research Competition-track of the 42<sup>nd</sup> International Conference on Software Engineering (ICSE 2020).
- Program co-chairs of the 14<sup>th</sup> International Workshop on Software Clones (IWSC 2020).

*Reviewer of international conferences and workshops:*

*2022*

- Program committee of the 1st International Conference on AI Engineering – Software Engineering for AI (CAIN'22).

- Program committee of 30<sup>th</sup> IEEE/ACM International Conference on Program Comprehension (ICPC 2022) – Research Track.
- Program committee of the 2022 Mining Software Repositories Conference (MSR 2022) – Registered Reports, Registered Report Track.
- Program committee of the 2022 Mining Software Repositories Conference (MSR 2022) – Registered Reports, Data and Tool Showcase Track.
- Program committee of the 2022 Mining Software Repositories Conference (MSR 2022) – Registered Reports, Hackathon Track.
- Program committee of the 29<sup>th</sup> IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2022) – Early Research Achievements (ERA) track.
- Program committee of the 15<sup>th</sup> Innovations in Software Engineering Conference (ISEC 2022) – Research Track.

#### 2021

- Program committee of the 13<sup>th</sup> IEEE International Conference on Knowledge and Systems Engineering (KSE 2021).
- Program committee of the 15<sup>th</sup> International Workshop on Software Clones (IWSC 2021).
- Program committee, Replications and Negative Results Track of the 13<sup>th</sup> Symposium on Search-Based Software Engineering (SSBSE 2021).
- Program committee, Research Track of the 37<sup>th</sup> International Conference on Conference on Software Maintenance and Evolution (ICSME 2021).
- Program committee, Late Breaking Results track of the 36<sup>th</sup> IEEE/ACM International Conference on Automated Software Engineering (ASE 2021).
- Program committee, Posters Track of the 36<sup>th</sup> IEEE/ACM International Conference on Automated Software Engineering (ASE 2021).
- Program committee, Posters Track of the 43<sup>rd</sup> International Conference on Software Engineering (ICSE 2021).

#### 2020

- Program committee, Late Breaking Results track of the 35<sup>th</sup> IEEE/ACM International Conference on Automated Software Engineering (ASE 2020).
- Program committee, Research Papers track of the 35<sup>th</sup> IEEE/ACM International Conference on Automated Software Engineering (ASE 2020).
- Program committee, Technical Research track of 28<sup>th</sup> IEEE/ACM International Conference on Program Comprehension 2020 (ICPC 2020).
- Program committee of the 13<sup>th</sup> Innovations in Software Engineering Conference (ISEC 2020).

#### 2019

- Program committee, Technical Research track of the 35<sup>th</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME 2019).
- Program committee, Technical Research track of 27<sup>th</sup> IEEE/ACM International Conference on Program Comprehension 2019 (ICPC 2019).

- Program committee, the 13<sup>th</sup> International Workshop on Software Clones (IWSC 2019).

### **Selected Research Grants**

- Research Grant for New Scholars (RGNS) from Ministry of Higher Education Science Research and Innovation (MHESRI) on the topic of "Code similarity applications for improving software quality", 2021-2023.
- Mahidol University Mini - Research Cluster (MU - MiniRC) on the topic of "Applying Software Engineering for Improving the Development of Data Science Application", 2021-2022 (lead by Dr. Apirak Hoonlor).
- Automated Software Engineering for Thailand Software Industry, Royal Academy of Engineering, UK and Thailand Science Research and Innovation (TSRI) (13,345 GBP), 2019 – 2021.
- UIC grant, University of Wollongong, 2019 - 2020.
- Amazon AWS Credits for Research (20,000 USD), 2018.
- NSF Student Travel Support (700 USD), the 8<sup>th</sup> Symposium on Search-Based Software Engineering, 2016.
- Microsoft Azure Research Award (20,000 USD), 2016.

### **Selected Invited Talks and Keynote Addresses**

N/A

### **Publication Statistics**

Monographs: 0

Journal Articles: 5

Conference Papers: 10

Book Chapters: 1

Workshop Papers: 5

Edited Volumes: 0

Citations (12 April 2022):

Google Scholar: 407 with h-index of 10

Scopus: 170 (excluding self-citations) with h-index of 7

### **Selected Publications** (Full publication list: <https://cragkhit.github.io/research.html>)

#### *Book Chapters*

- Krinke, J., & Ragkhitwetsagul, C. (2021). *Code Similarity in Clone Detection (Book Chapter)*. In K. Inoue & C. K. Roy (Editors.), *Code Clone Analysis* (pp. 135–160), Springer.

#### *Journals*

- Choetkiertikul, H. K. Dam, T. Tran, T. Pham, C. Ragkhitwetsagul, A. Ghose. *Automatically recommending components for issue reports using deep learning*. Empirical Software Engineering (EMSE), (2021) 26:14.
- M. Paixao, J. Krinke, D. Han, C. Ragkhitwetsagul, M. Harman. *The Impact of Code Review on Architectural Changes*. Transactions on Software Engineering (TSE), 2019.
- C. Ragkhitwetsagul, J. Krinke. Siamese: Scalable and Incremental Code Clone Search via Multiple Code Representations. *Empirical Software Engineering*, 2019.
- C. Ragkhitwetsagul, J. Krinke, M. Paixao, G. Bianco, R. Oliveto, Toxic Code Snippets on Stack Overflow, *IEEE Transactions on Software Engineering*, 2019.
- C. Ragkhitwetsagul, J. Krinke, D. Clark. A Comparison of Code Similarity Analysers. *Empirical Software Engineering*, <https://doi.org/10.1007/s10664-017-9564-7>, 2017.

### Conferences

- Ragkhitwetsagul C., Paixao M., *Recommending Code Improvements Based on Stack Overflow Answer Edits*, International Conference on Mining Software Repositories (MSR '22) – Registered Report, 18-20 May 2022, Pittsburgh, PA, USA (Virtual Event).
- Ragkhitwetsagul C., Krinke J., Choetkiertikul M., Sunetnanta T., Sarro F., *Identifying Software Engineering Challenges in Software SMEs: A Case Study in Thailand*. in the 29th International Conference on Software Analysis, Evolution, and Reengineering (SANER'22) - Industry Track, 15-18 March 2022, Honolulu, Hawaii (Virtual Event).
- Phaithoon S., Wongnil S., Pussawong P., Choetkiertikul M., Ragkhitwetsagul C., Sunetnanta T., Maipradit R., Hata H., Matsumoto K., *FixMe: A GitHub Bot for Detecting and Monitoring On-hold Self-Admitted Technical Debt*. in the Proceedings of the International Conference on Automated Software Engineering (ASE) - Tool Demonstrations Track, 2021 (Virtual Event).
- Robert White, Jens Krinke, Earl Barr, Federica Sarro, Chaoyong Ragkhitwetsagul, *Artefact Relation Graphs for Unit Test Reuse Recommendation*. in the Proceedings of IEEE International Conference on Software Testing (ICST), Virtual Event.
- D. Han, C. Ragkhitwetsagul, J. Krinke, M. Paixao, G. Rosa, *Does code review really remove coding convention violations?*. in the 20th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM) in Adelaide, Australia.
- C. Khanan, W. Luewichana, K. Pruktharathikoon, J. Jiarpakdee, C. Tantithamthavorn, M. Choetkiertikul, C. Ragkhitwetsagul, T. Sunetnanta. *JITBot: An Explainable Just-In-Time Defect Prediction Bot*, in the 35th IEEE/ACM International Conference on Automated Software Engineering (ASE '20) - Tool Demo Track, September 21–25, 2020, Virtual Event, Australia.
- P. Phan-udom, N. Wattanakul, T. Sakulniwat, C. Ragkhitwetsagul, T. Sunetnanta, M. Choetkiertikul, R.G. Kula *Teddy: Automatic Recommendation of Pythonic Idiom Usage For Pull-Based Software Project*, in the 36th IEEE International Conference on Software Maintenance and Evolution (ICSME 2020) in Adelaide, Australia.
- J. Wilkie, Z. Al Halabi, A. Karaoglu, J. Liao, G. Ndungu, C. Ragkhitwetsagul, M. Paixao, J. Krinke. Who's this? Developer identification using IDE event data. In *the*

*15<sup>th</sup> International Conference on Mining Software Repositories – Mining Challenge (MSR 2018)*, 2018. Gothenburg, Sweden.

- M. Paixao, J. Krinke, D. Han, C. Ragkhitwetsagul and M. Harman. Are Developers Aware of the Architectural Impact of Their Changes? In *the 32<sup>nd</sup> IEEE/ACM International Conference on Automated Software Engineering (ASE 2017)*, 2017. Illinois, USA.
- C. Ragkhitwetsagul, M. Paixao, M. Adham, S. Busari, J. Krinke, and J. H. Drake. Searching for Configurations in Clone Evaluation: A Replication Study. In *8<sup>th</sup> International Symposium on Search-based Software Engineering (SSBSE): Challenge Track*, 2016. Raleigh, NC, USA.
- C. Ragkhitwetsagul, J. Krinke, D. Clark. Similarity of Source Code in the Presence of Pervasive Modifications. In *16<sup>th</sup> IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM)*, 2016. Raleigh, NC, USA.
- C. Ragkhitwetsagul. Measuring Code Similarity in Large-scaled Code Corpora. In *32<sup>nd</sup> International Conference on Software Maintenance and Evolution (ICSME): Doctoral Symposium*, 2016. Raleigh, NC, USA.

## Workshops

- N. Assavakamhaenghan, M. Choetkiertikul, S. Tuarob, R. G. Kula, H. Hata, C. Ragkhitwetsagul, T. Sunetnanta, and K. Matsumoto. *Software Team Member Configurations: A Study of Team Effectiveness in Moodle*, in the 10th International Workshop on Empirical Software Engineering in Practice (IWESEP 2019), Tokyo, Japan.
- T. Sakulniwat, R. G. Kula, C. Ragkhitwetsagul, M. Choetkiertikul, T. Sunetnanta, D. Wang, T. Ishio and K. Matsumoto. *Visualizing the Usage of Pythonic Idioms Over Time: A Case Study of the with open Idiom*, in the 10th International Workshop on Empirical Software Engineering in Practice (IWESEP 2019), Tokyo, Japan.
- V. Arammongkolvichai, R. Koschke, C. Ragkhitwetsagul, M. Choetkiertikul, T. Sunetnanta. *Improving Clone Detection Precision using Machine Learning Techniques*, in the 10th International Workshop on Empirical Software Engineering in Practice (IWESEP 2019), Tokyo, Japan.
- C. Ragkhitwetsagul, J. Krinke. A picture is worth a thousand words: code clone detection based on image similarity. In *the 12<sup>th</sup> International Workshop on Software Clones (IWSC 2018)*, 2018. Campobasso, Italy.
- C. Ragkhitwetsagul, J. Krinke. Using Compilation/Decompilation to Enhance Clone Detection. In *11<sup>th</sup> International Workshop on Software Clones*, 2017. Klagenfurt, Austria.

## Technical Reports

- C. Ragkhitwetsagul, J. Krinke, R. Oliveto. Awareness and Experience of Developers to Outdated and License-Violating Code on Stack Overflow: An Online Survey. *UCL Computer Science Research Note (RN/17/10)*, 2017.

## Doctoral Student Supervision

N/A

## Undergraduate Student Supervision

2021

- Chansida Makaranond, Pattarakrit Rattanukul, Pumipat Watanakulcharus  
Project: *Microuisity: Security Testing Tool for Backend for Frontend (BFF) Microservice Architecture* (co-supervised with Asst. Prof. Dr. Vasaka Visoottiviseth and Tanapol Nearunchorn, Lineman Wongnai).

2020

- Tasha Sette Wong, Natanon Ritta, NAIST summer internship (co-supervised with Asst. Prof. Dr. Thanwadee Sunetnanta and Dr. Morakot Choetkiertikul, Raula G. Kula).
- [Phattharapong Poolthong](#), [Panaya Sirilertworakul](#), [Kanika Wonwien](#)  
Project: *JARVAN: Automatic checker for outdated StackOverflow answers in software projects.*
- [Vipawan Jarukitpipat](#), [Wachirayana Wanprasert](#), [Klinton Chhun](#)  
Project: *Achilles: Analysis of effects from software dependency vulnerabilities*

2019

- [Vara Arammongkolvichai](#), [Weekit Ausavaserenont](#), Wannaporn Vichaisri  
Project: *Merry: Web-based Code Clone Detection System using Machine Learning*
- Purit Phan-udom, Naruedon Wattakul, Tattiya Sakulniwat  
Project: *TEDDY: Automated tool for detection and suggestion of Pythonic idiom usage*
- (Co-supervisor) [Thanachanok Siripittakul](#), [Peerachai Banyongrakkul](#), [Thayut Indramaha](#)  
Project: *Sprint2Vec: A deep learning-based model for learning vector representation of iterative software development*
- (Co-supervisor) Krissakorn Pruktharathikoon, Natcha Sirikunanon, Rapipat Udomgun  
Project: *Bug Hunter v.2*

## Program and Curriculum Development

- Bachelor of Science in Digital Science and Technology (DST), Faculty of Information and Communication Technology, Mahidol University.

## Courses Taught at Mahidol University

- ITCS371 Introduction to Software Engineering
  - ITCS431 Software Design and Development
  - ITCS473 Software Quality Assurance and Testing
  - ITCY553 Secure Software Design
  - ITCS335 Introductions to e-Business Systems
  - ITDS101 Industry Experiences and Problems I
  - ITCS155 Introduction to Computer
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