

Chaklam Silpasuwanchai

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CURRENT POSITION

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- **Asian Institute of Technology** Pathumthani, Thailand
Faculty, School of Engineering and Technology January 2019 – present

SKILLS

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- **Language:** Python, Java, Javascript, HTML/CSS
 - **Tools/Frameworks:** PyTorch, SpringBoot
 - **Theory:** Natural Language Processing, Machine/Deep Learning, Software Engineering, Human-Computer Interaction, Data Structures and Algorithms

SELECTED PROJECTS

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- **Large Language Models:** Develop conversational AI for legal question answering, writing assistant, AI-generated detector, university chatbots, summarization, etc. using large language models.
 - **BCI Speller:** Develop a real-time speller using EEG for locked-in patients.
 - **Non-Invasive Blood Glucose Measuring Using Raman Spectroscopy:** Utilize raman spectroscopy to non-invasively measure blood glucose.
 - **Medical Imaging:** Utilize deep learning and language models for medical image analysis and explanations.

EDUCATION

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- **Kochi University of Technology** Kochi, Japan
Doctor of Engineering in Computer Science; GPA: 4.00 March 2012 – March 2017
 - **Asian Institute of Technology** Pathumthani, Thailand
Master of Engineering in Computer Science; GPA: 3.94 August 2009 – May 2011
 - **Sirindhorn International Institute of Technology** Pathumthani, Thailand
Bachelor of Science in Computer Science; GPA: 3.82 (First-Class Honours) June 2004 – March 2008

REFERRED PUBLICATIONS

Scopus (h-index, citations): 11, 381 (Last updated: June 2023) - <https://www.scopus.com/authid/detail.uri?authorId=56157659200>

International Refereed Journals

1. Shafana, F. and Silpasuwanchai, C. Investigating the Role of Gesture Modalities and Screen Size in an AR 3D Game. *Multimedia Tools and Publications*. 2023. (IF: 3.6)
2. Pananookooln, C., Akarane, J., and Silpasuwanchai, C. Comparing Selective Masking Methods for Depression Detection in Social Media. *Computational Linguistics*, 1-29. 2023. (IF: 7.778)
3. Sunthorn, W., Le Mercier, C., and Silpasuwanchai, C. Making time perception shorter with pitch and interval patterns. *Behaviour and Information Technology*, 1-11. 2023. (IF: 3.32)
4. Shakya, S., Taparugssanagorn, A., and Silpasuwanchai, C. (2023). Convolutional Neural Network-Based Low-Powered Wearable Smart Device for Gait Abnormality Detection. *IoT*, 4(2), 57-77. 2023. (CiteScore: 5.23)
5. Wabina, R. S., and Silpasuwanchai, C. Neural stochastic differential equations network as uncertainty quantification method for EEG source localization. *Biomedical Physics and Engineering Express*. 2022. (IF: 1.4)
6. Niksirat, KS., Silpasuwanchai, C., Cheng, P. and Ren, X. Attention Regulation Framework: Designing Self-Regulated Mindfulness Technologies. *ACM Transactions on Computer-Human Interaction*. 26, 6, Article 39 (November 2019), 44 pages. DOI: <https://doi.org/10.1145/3359593>. (IF: 4.106)
7. Ren, X and Silpasuwanchai, C.. Human-Engaged Computing. The Future of Human-Computer Interaction. *CCF Transactions on Pervasive Computing and Interaction* 1(1). 2019. (IF: 2.59)
8. Niksirat, KS., Silpasuwanchai, C. and Ren, X. Sex Differences in relationship between flow proneness in everyday life and gray matter of the dopaminergic system: a cross-sectional study. *Personality and Individual Differences* 141. 2019. (IF: 3.95)
9. Sarcar, S., Jokinen, J., Oulasvirta, A., Wang, Z., Silpasuwanchai, C. and Ren, X. Ability-Based Optimization of Touchscreen Interactions. *IEEE Pervasive Computing* 17(1). 2018. (IF: 1.6)

10. Sarcar S., Jokinen, J., Oulasvirta, A., Ren, X., Silpasuwanchai, C., and Wang, Z. Ability-Based Optimization: Designing Smartphone Text-Entry Interface for Older Adults. *INTERACT 4(1)*, 2017. (IF: N/A)
11. Putra, H.A., Silpasuwanchai, C. and Ren, X. AirSqueeze: An Air-Based Game Input Device. *ICIC Express Letter*. 2016. (IF: N/A)
12. Silpasuwanchai, C. and Ren, X. Designing Concurrent Full-Body Gestures for Intense Gameplay. *International Journal of Human Computer Studies 80 (1)*, Elsevier, 2015. (IF: 5.4)

International Refereed Proceedings

1. Parmar, M. and Silpasuwanchai, C. Impact of User Mobility on Attentional Tunneling in Handheld AR. In *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems* (pp. 1-6). 2023. *Acceptance rate: TBD*
2. Delamare, W., Silpasuwanchai, C., Sarcar, S., Shiraki, T. and Ren, X. 2019. On Gesture Combination: An Exploration of a Solution to Augment Gesture Interaction. *Proc. ACM ISS 2019*. (*Acceptance rate: 26/85=30.6%*)
3. Niksirat, K.S., Sarcar, C., Sun, H., Law, E., Clemmensen, T., Bardzell, J., Oulasvirta, A., Silpasuwanchai C., Light A., Ren X.. Approaching Engagement Towards Human-Engaged Computing . *Proc. ACM CHI SIG 2018*. (*Acceptance rate: 43/108=39.8%*)
4. Ahmed, M.H.H., Silpasuwanchai, C., Niksirat, K.S. and Ren, X. Understanding the Role of Human Senses in Interactive Meditation. *Proc. ACM CHI 2017*. (*Acceptance rate: 1000/5000=20%*)
5. Jokinen, J., Sarcar, S., Oulasvirta, A., Silpasuwanchai, C., Wang, Z. and Ren, X. Modelling Learning of New Keyboard Layouts. *Proc. ACM CHI 2017*. (**Best Paper Awards 1%**) (*Acceptance rate: 1000/5000=20%*)
6. Niksirat, K.S., Silpasuwanchai, C., Ahmed, M.H.H., Peng, C. and Ren, X. A Framework for Interactive Meditation Using Attention Regulation. *Proc. ACM CHI 2017*. (*Acceptance rate: 1000/5000=20%*)
7. Niksirat, K., Silpasuwanchai, C., Ren, X., and Wang, Z. Towards Cognitive Enhancement of the Elderly: A UX Study of a Multitasking Motion Video Game. *Proc. ACM CHI LBW 2017*. (*Acceptance rate: Not Disclosed*)
8. Sarcar S., N., Munteanu, C., Jokinen, J., Oulasvirta, A., Silpasuwanchai, C., Charness, N., Dunlop, M. and Ren, X. Designing Mobile Interactions for the Ageing Populations. *Proc. ACM CHI Workshop 2017*. (*Acceptance rate: Not Disclosed*)
9. Niksirat, K.S., Silpasuwanchai, C., Wang, Z., Fan, J. and Ren, X. Age-Related Differences in Gross Motor Skills. *Proc. ACM IxAP 2016*. *Acceptance rate: 11/22=50%*)
10. Niksirat, K.S., Silpasuwanchai, C., Wang, Z., Fan, J. and Ren, X. How Skill-Balancing Impact the Elderly Player Experience. *Proc. IEEE Signal Processing 2016*. (*Acceptance rate: Not Disclosed*)
11. Sarcar, S., Jokinen, J., Oulasvirta, A., Silpasuwanchai, C., Wang, Z. and Ren, X. Towards Ability-Based Optimization for Aging Users. *Proc. ACM IxAP 2016*. *Acceptance rate: 11/22=50%*)
12. Silpasuwanchai, C., Ma, X., Shigemasa, H., and Ren, X. Developing a Comprehensive Engagement Framework of Gamification for Reflective Learning. *Proc. ACM DIS 2016*. (*Acceptance rate: 108/418=26%*)
13. Dim, N.K., Silpasuwanchai, C., Sarcar, S. and Ren, X. Designing Mid-Air TV Gestures for Blind People Using User- and Choice-Based Elicitation Approach. *Proc. ACM DIS 2016*. (*Acceptance rate: 108/418=26%*)
14. Charness, N., Dunlop, M., Munteanu, C., Nicol, E., Oulasvirta, A., Ren, X., Sarcar S. and Silpasuwanchai, C.. Rethinking Mobile Interfaces for Older Adults. *Proc. ACM CHI SIG 2016*. (*Acceptance rate: Not Disclosed*)
15. Law, E., Silpasuwanchai, C., Ren, X., Bardzell, J., Clemmensen, T., Liu, Y. Leveraging and Integrating Eastern and Western Insights for Human Engagement Studies in HCI. *Proc. ACM CHI Workshop 2015*. (*Acceptance rate: Not Disclosed*)
16. Mizobata, R., Silpasuwanchai, C. and Ren, X. Only for casual players? Investigating Player Differences in Full-Body Game Interaction. *Proc. ACM CCHI 2014*. (*Acceptance rate: 17/55=30.9%*)
17. Silpasuwanchai, C. and Ren, X. Jump and Shoot! Prioritizing Primary and Alternative Body Gestures for Intense Gameplay. *Proc. ACM CHI 2014*. (*Acceptance rate: 470/2064=22.8%*)

Book Chapters

1. Silpasuwanchai, C. and Ren, X. A Quick Look at Game Engagement Theories. *Wiley Handbook of Human Computer Interaction 2*. 2018.

TEACHING EXPERIENCE

- **Machine Learning**
 - *Topics: Supervised Learning, Unsupervised Learning, Deep Learning, Reinforcement Learning*
- **Data Structures and Algorithm**
 - *Topics: Asymptotic notation, Data Structures, Sorting, Graph, Greedy Algorithms, Dynamic Programming*
- **Python for Data Analysis**
 - *Topics: Numpy, Pandas, Matplotlib, Scikit-learn*
- **Human Computer Interaction**
 - *Topics: HCI Design, Human Factors, Interaction Techniques, Empirical Experiments*
- **Natural Language Processing**
 - *Topics: Word Embeddings, Deep Learning Models (LSTM, Transformers), NLP Tasks, Constituency Grammar, etc.*

EMPLOYMENT

- **Stamford International University** Bangkok, Thailand
Faculty, IT Program, Faculty of Business and Technology March 2017 - December 2019
- **Asian Institute of Technology** Pathumthani, Thailand
Adjunct Professor, School of Computer Science and Information Management January 2019 - December 2019
- **Kasetsart University** Bangkok, Thailand
Visiting Professor, Department of Statistics July 2018 - December 2018
- **Kochi University of Technology** Kochi, Japan
Postdoctoral Researcher April 2015 - February 2017
- **Asian Institute of Technology** Pathumthani, Thailand
Research Associate August 2011 - February 2012
- **Vcharkarn.com** Bangkok, Thailand
Software Engineer 2005 - 2007

GRANTS

- **Office of the National Broadcasting and Telecommunications Commission (co-PI):** Telehealth Monitoring and Assistive Systems for Elderly and Disabled People (14,000,000 Baht), June 2022 - June 2025.
- **Ministry of Higher Education, Science, Research and Innovation (MHESI), Young Scientist (PI):** Hybrid P300-SSVEP BCI Speller for Thai Language (595,000 Baht), March 2021 - March 2023.
- **Thailand Science Research and Innovation (TSRI) (PI):** Hybrid P300-SSVEP BCI Speller for Thai Language (124,750 Baht), October 2020 - October 2021.
- **Thailand Toray Science (PI):** National Science and Technology Development Agency: Hybrid P300-SSVEP BCI Speller for Thai Language (190,000 Baht), March 2019 - March 2020.
- **Stamford Competitive Internal Grants (PI):** Developing Brain-Computer Interfaces Using P300 (234,000 Baht), September 15, 2018 -- September 14, 2019. (The acceptance rate is around 30%.)
- **Grant-in-Aid for Scientific Research by MEXT (PI):** Ministry of Education, Culture, Sports, Science and Technology, Japan (No.16K21300) (4,992,000 JPY): Investigating Cognitive Enhancement of Elderly People by Using Motion Video Games, April 1, 2016 -- March 31, 2018. (The acceptance rate is around 20-25%.)
- **Japan-Finland Collaborative Research Projects by JST, AF and Tekes (co-PI):** Japan-Finland Collaborative Research Projects by JST, AF and Tekes (18,000,000 JPY): User Interface Design for the Ageing Population, April 1, 2015 -- March 31, 2017. (The acceptance rate is 18%.)

AWARDS

- **Honorable Mentions by the ICACHI community:** Granted by International Chinese Association of Computer Human Interaction for his contribution to the Chinese HCI community. 2015
- **Special Scholarship Program Full Scholarship :** Granted by the Kochi Prefecture to students with academic achievements for pursuing a Doctoral Degree at Kochi University of Technology, Kochi, Japan. 2012-2015
- **Royal Thai Government Full Scholarship :** Granted by the Royal Thai Government to students with academic achievements for pursuing a Master Degree at Asian Institute of Technology, Pathum Thani, Thailand. 2009-2011.
- **2nd Place Award for Thailand National Open-Sourced Software Contest:** Awarded for a sketch recognition algorithm for diagram construction. 2008.

INDUSTRIAL ENGAGEMENT

- **SCB Data Analytics for Upskilling Program:** Served as a member in preparing and consulting training materials and certifications for upskilling staffs on data analytics skills at SCB and partner companies.
- **KMUTT Learn-AI:** Served as a member in preparing online training materials related to AI for KMUTT Learn-AI program
- **NornNorn Risk Modeling:** Collaborated with NornNorn on developing a risk model using machine learning for predicting risks on offering credit payments.
- **NSTDA Motor Imagery Project:** Collaborated with NSTDA team on modeling motor imagery for Brain-Computer Interfaces.

ACADEMIC ENGAGEMENT

- **Computer Science Curricula Development:** Lead the development of Computer Science curricula for Yangon University, Myanmar.
- **Data Science Curricula Development:** Lead the development of Data Science curricula for Stamford International University, Thailand
- **Program Committee:** ACM CHI 2018 LBW track, ACM DIS 2017 Provocations and WIP track
- **External Reviewers:** ACM CHI 2016-2019, ACM DIS 2016-2018, IEEE Transactions on Human-Machine Systems
- **Organizers:** ACM IxAP 2016, IDHF 2014, Techfest iNexus, IEEE YESIST 2019
- **Student Volunteers:** ACM APCHI 2012, WISS 2013
- **Vice-Secretary General:** International Chinese Association of Human Computer Interaction, China. 2016-2019.

REFERENCES

- **Xiangshi Ren:** Kochi University of Technology; ren.xiangshi@kochi.tech.ac.jp
- **Matthew Dailey:** Asian Institute of Technology (Thailand); matthew.dailey@ait.asia
- **Sayan Sarcar:** Birmingham City University (UK); sayan.sarcar@bcu.ac.uk