

## JESSADA KARNJANA

1/273 Soi Rattanathibet 1, Rattanathibet Rd., Bangkrasor, Mueang Nonthaburi, Nonthaburi, 11000, Thailand

Email: [jessada.karnjana@nectec.or.th](mailto:jessada.karnjana@nectec.or.th) Tel: +66 86 9777 130

### Education

|             |                                    |  |
|-------------|------------------------------------|--|
| 2012 – 2017 | Ph.D. (Engineering and Technology) | Sirindhorn International Institute of Technology, Thammasat University, Thailand |
| 2013 – 2016 | Ph.D. (Information Science)        | Japan Advanced Institute of Science and Technology, Japan                        |
| 2004 – 2006 | M.Eng. (Microelectronics)          | Asian Institute of Technology, Thailand  |
| 1995 – 1999 | B.Eng. (Electronics Engineering)   | King Mongkut's Institute of Technology Ladkrabang, Thailand                      |

### Employment

|                |   |
|----------------|---|
| 1999 – Present | Researcher (2017 – Present), Research Assistant (1999 – 2016), National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA) |
| 2017 – Present | Adjunct Faculty, Sirindhorn International Institute of Technology (SIIT), Thammasat University (TU)   |
| 2017 – 2018    | Visiting Faculty, Faculty of Economics, Kasetsart University (KU)   |
| 2017           | Instructor and Tutor, SIIT, TU  |
| 2013, 2015     | Teaching Assistant, SIIT, TU  |
| 2013 – 2016    | Research Assistant, Japan Advanced Institute of Science and Technology (JAIST)  |
| 2014           | Research Assistant, SIIT, TU  |

## Professional Experience, Research, and Development Projects

- 2021 – Present [Research Project] **Change Detection in Multi-temporal Remote Sensing Images for Landslide Monitoring (Principal Investigator)**; NECTEC, KMITL, and NICT (This project has been financially supported by the Office of Permanent Secretary of the Ministry of Higher Education, Science, Research and Innovation, Thailand.)
- 2020 – Present Ph.D. co-advisor and thesis committee member of 4 Ph.D. students under TAIST-JAIST program: Mr. Anuwat Chaiwongyen, Ms. Lalitpat Aswanuwath, Ms. Nittaya Chemkomnerd, and Ms. Thanyamon Pattanapisont.
- Research supervisor of Ms. Kullanan Sukwanchai, a Ph.D. candidate of AIT, under the NSTDA Top-up Scholarship, Development of High-quality Research Graduates in Science and Technology Project
- Co-advisor and thesis committee member of 3 Master's degree students under the TAIST-TokyoTech program: Mr. Witthawin Achariyaviriya, Ms. Nathnaree Smuynyhirun, and Mr. Panupong Kumpipot.
- 2019 – Present [Research Project] **Strengthening Agriculture 4.0 Technology in a Thailand-Myanmar-Germany Collaboration: Development of a Plant-based Irrigation Platform (Principal Investigator)**; NECTEC, Julich, and UCSY (This project has been financially supported by Southeast Asia-Europe Joint Funding Scheme for Research and Innovation.)
- 2019 – Present [Research Project] **Relay Station Network Based on Low-power Wide-area Network (LPWAN) Technologies for Disaster Management (Principal Investigator)**; NECTEC and research partners in Japan and ASEAN countries (This project has been financially supported by the ICT Virtual Organization of ASEAN Institute and NICT, Japan.)

- 2019 – Present [Research Project] **Establishment of a Landslide Monitoring and Prediction System** (Principal Investigator); NECTEC and research partners in Japan and Vietnam (This project has been financially supported by e-Asia JRP and NSTDA.)
- 2019 – Present Supervising 6 Master’s degree students under the TAIST-TokyoTech program:
1. Mr. Kamin Atsawasilert (SIIT); he is working on speech emotion recognition techniques.
  2. Mr. Panuwit Nantasri (KU); he is working on speech emotion recognition techniques.
  3. Ms. Pantid Chantangphol (SIIT); she is working on speech emotion recognition techniques.
  4. Mr. Pitisit Dillon (SIIT); his thesis title is Monitoring Surface Displacement from Terrestrial LiDAR Point Cloud Images.
  5. Mr. Asadang Tanatipuknon (SIIT); his thesis title is Change Detection in Multi-temporal Satellite Images for Landslide Monitoring.
  6. Mr. Kittikom Sangrit (SIIT); his work focuses on wireless sensor networks of landslide monitoring systems and the visual IoT camera system.
- Supervising 1 SIIT Master’s degree student:
1. Mr. Parinya Khansong; he is working on analysis of the bill-payment behavior of PEA customers.
- 2019 – Present Ph.D. co-advisor and thesis committee member of Mr. Vichathorn Piyathannavong and Mr. Sukhum Sankaewthong (They are students under the TAIST-JAIST double degree program.)
- 2019 Organizing (and being an MC of) the **Smart Information/ Smart Knowledge/ Smart Material Workshop 2019**, JAIST International School
- 2018 – Present [Research Project] **Mesh-topological, Low-power Wireless Network Platform for a Smart Watering System** (Principal Investigator); NECTEC and research partners in Japan and ASEAN countries (This project has been financially supported by the ICT Virtual Organization of ASEAN Institute and NICT, Japan.)
- 2018 – Present Ph.D. co-advisor and thesis committee member of Ms. Su Wutyi Hnin (a student under the TAIST-JAIST double degree program)
- 2018 Technical program committee of the International Joint Symposium on Artificial Intelligence and Natural Language Processing (iSAI-NLP 2018)
- 2018 Technical program committee of the Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC 2018)
- 2018 Initiating and organizing the **International Workshop on Landslide Preparedness in the ASEAN Member States: A Data Fusion Approach to Real-time Monitoring System and Information Management** (Project Leader); NECTEC and research partners in ASEAN countries (This project was financially supported by the Office of Permanent Secretary of the Ministry of Science and Technology, Thailand.)
- 2017 – Present Supervising 2 Ph.D. students who study at SIIT-TU, Thailand, and JAIST, Japan:
1. Ms. Kasorn Galajit; she is working on development of audio watermarking techniques and anti-spoofing techniques.
  2. Mr. Suradej Duangpummet; he is working on development of speech-transmission-index estimation.
- 2017 – 2018 Being a member of Master’s thesis committees:

1. Ms. Katekanya Tadsuwan, SIIT-TU; she was a student under the TAIST-Tokyo Tech Program, and she worked on the study of the effects of vegetation on slope stabilization for landslide prevention in Thailand.
2. Ms. Sasima Yoochareon, SIIT-TU; she was a student under the TAIS-Tokyo Tech Program, and she worked on the geological investigation of cut slope failure in contact zone: a case study of Doi Tung, Thailand.
3. Ms. Preechaya Kittipakawat, KU; she was a student under the TAIS-Tokyo Tech Program, and she worked on the assessment of landslide susceptibility area using RS and GIS.

|                |   |
|----------------|---|
| 2017 – Present | [Research Project] <b>Real-time Monitoring System Based on Wireless Sensor Network for Landslide-prone Areas</b> ( <u>Project Leader</u> ); NECTEC and research partners in ASEAN countries (This project has been financially supported by the ASEAN Committee on Science and Technology.)   |
| 2017 – 2019    | [Research Project] <b>Low-power Wireless Network Platform for a Landslide Monitoring System</b> ( <u>Project Leader</u> ); NECTEC and research partners in ASEAN countries (This project was financially supported by the Office of Permanent Secretary of the Ministry of Science and Technology, Thailand.)                                     |
| 2017 – 2018    | [Research Project] <b>Mathematical Modeling of Dissolved Oxygen in Aquaculture Facilities</b> ( <u>Project Leader</u> ); NECTEC   |
| 2017           | Initiating and organizing the <b>International Workshop on Landslide Risk Assessment and Management for the ASEAN Member States</b> ( <u>Project Leader</u> ); NECTEC and research partners in ASEAN countries (This project was financially supported by the Office of Permanent Secretary of the Ministry of Science and Technology, Thailand.) |
| 2017           | Technical program committee of The 8 <sup>th</sup> International Conference on Information and Communication Technology for Embedded Systems  |
| 2017           | Organizing (and being an MC of) the <b>Smart Information/ Smart Knowledge/ Smart Material Workshop 2017</b> , JAIST International School  |
| 2016 – 2018    | [Research Project] <b>Less-Visible Contrast Enhancement</b> ; JAIST, SIIT, and NECTEC   |
| 2013 – Present | [Research Project] <b>Audio Information Hiding</b> ; JAIST, SIIT, and NECTEC  |
| 2011           | [Development Project] Consumer Electronics Development Kits (CEDK-TN8, CEDK-16DSP); NECTEC  |
| 2010           | [Development Project] Smart Clock System ( <u>Project Leader</u> ); NECTEC  |
| 2009           | [Development Project] Embedded System Development Kit for Wireless Sensor Network; NECTEC   |
| 2009           | [Development Project] Control Unit for Rice Sorter Machine; NECTEC  |
| 2007           | [Development Project] 8-Bit Consumer Electronics Development Kits; NECTEC   |
| 2003           | [Development Project] Power-line Carrier Module for LEONICS protocol ( <u>Project Leader</u> ); NECTEC  |
| 2000           | [Development Project] Coin Detection Algorithm; NECTEC  |
| 1999           | [Development Project] GUI for PCT Phone; NECTEC   |

|                     |   |
|---------------------|---|
| <b>Awards</b>       | Best Paper Award from iSAI-NLP, 2019<br>Best Paper Award from IIH-MSP, 2018<br>Best Session Paper Award from CIIS, 2018<br>Best Presentation Award from iSAI-NLP, 2018<br>2 Best Paper Awards from iSAI-NLP, 2018<br>Best Paper Award of IEICE for 2016 |
| <b>Petty Patent</b> | Consumer Electronics Development Kit; NECTEC  |
| <b>Interests</b>    | Audio/speech information hiding, Psychoacoustics, Psychoacoustic model<br>Signal processing, Signal analysis, Image enhancement, Multi-exposure fusion<br>Data analysis, Reasoning with uncertainty, Data-driven analysis, Multi-sensor data fusion     |
| <b>Hobbies</b>      | Writing, book translation, book editing, and blogging. Please visit: <a href="http://www.jessada-k.com">http://www.jessada-k.com</a><br>Board gaming  |

## Publications

### International Journal

1. Suthum Keeratvittayanun, Toshiaki Kondo, Kazunori Kotani, Teera Phatrapornnant, and **Jessada Karnjana**, "Two-layer Pyramid-based Blending Method for Exposure Fusion," *Machine Vision and Applications* 32, 48 (2021) (doi: <https://doi.org/10.1007/s00138-021-01175-9>)
2. Duc-Vihn Vo, **Jessada Karnjana**, and Van-Nam Huynh, "An Integrated Framework of Learning and Evidential Reasoning for User Profiling Using Short Texts," *Information Fusion*, Vol. 70, June 2021, pp. 27-42 (doi: <https://doi.org/10.1016/j.inffus.2020.12.004>)
3. Anh-Tu Tran, The-Dung Luong, **Jessada Karnjana**, Van-Nam Huynh, "An Effective Approach for Privacy Preserving Decentralized Deep Learning Models Based on Secure Multi-party Computation," *Neurocomputing*, Vol. 422, January 2021, pp. 245-262 (doi: <https://doi.org/10.1016/j.neucom.2020.10.014>)
4. Chayaporn Maitreesorasuntee, Chawalit Jeenanunta, Jirachai Buddhakulsomsiri, Warut Pannakkong, Rujira Chaysiri, Nakamura Masahiro, and **Jessada Karnjana**, "A Steel Tube Production Planning and Scheduling with Product-dependent Changeover Time Using Digital Twin," *International Scientific Journal of Engineering and Technology*, Vol. 4, No. 2, pp. 13-19. (url: <https://ph02.tci-thaijo.org/index.php/isjet/article/view/240792>)
5. Yoshiteru Nakamori, Kalaya Udomvitid, Sapa Chanyachatchawan, and **Jessada Karnjana**, "Creating Promotion Stories with Knowledge Management Reinforced by Systems Thinking," *Journal of Systems Science and Systems Engineering*, Vol. 29, No. 2, April 2020, pp. 163–183 (doi: <https://doi.org/10.1007/s11518-019-5446-4>)
6. Kasorn Galajit, **Jessada Karnjana**, Pakinee Aimmanee, and Masashi Unoki, "Semi-fragile speech watermarking based on singular-spectrum analysis with CNN-based parameter estimation for tampering detection," *APSIPA Transactions on Signal and Information Processing* 8 (2019). (doi: <https://doi.org/10.1017/ATSIP.2019.4>)
7. Suradej Duangpummet, **Jessada Karnjana**, and Waree Kongprawechnon, "State-of-Charge Estimation Based on Theory of Evidence and Interval Analysis with Differential Evolution Optimization," *Annals of Operations Research*, 2019, pp. 1-16. (doi: <https://doi.org/10.1007/s10479-019-03390-0>)
8. Kittipakawat Preechaya, Suttisak Soralum, Alice Sharp, **Jessada Karnjana**, and Masashi Matsuoka. "Assessment of Landslide Susceptibility Area using RS and GIS in Krabi," *GMSARN International Journal*, Vol. 12, No. 4, December, 2018 (<http://gmsarnjournal.com/home/journal-vol-12-no-4/>)
9. Piyawat Sukkhummek, **Jessada Karnjana**, Sawit Kasuriya, Chai Wutiwiwatchai, and Thanaruk Theeramunkong, "A Comparative Annotator-agreement Analysis of Emotional Speech Corpora," *Journal of Intelligent Informatics and Smart Technology*, Vol. 3, April, 2018. ([https://jiist.aiat.or.th/assets/uploads/1525534528225RvGIFJIIST3\\_04\\_Piyawat\\_v2.pdf](https://jiist.aiat.or.th/assets/uploads/1525534528225RvGIFJIIST3_04_Piyawat_v2.pdf))

10. S. Keerativittayanun, K. Kotani, T. Kondo, T. Phatrapornnant, and **J. Karnjana**, "Less-visible contrast enhancement based on the human visual perception," *Optik*, 157 (2018), pp. 467-483, 2018. (doi: <https://doi.org/10.1016/j.ijleo.2017.11.096>)
11. **J. Karnjana**, M. Unoki, P. Aimmanee, and C. Wutiwiwatchai, "Audio Watermarking Scheme Based on Singular-Spectrum Analysis and Psychoacoustic Model with Self Synchronization," *Journal of Electrical and Computer Engineering*, 2016. (doi: <http://dx.doi.org/10.1155/2016/5067313>)
12. **J. Karnjana**, M. Unoki, P. Aimmanee, and C. Wutiwiwatchai, "Singular-Spectrum Analysis for Digital Audio Watermarking with Automatic Parameterization and Parameter Estimation," *IEICE Transaction on Information and System*, Vol.E99-D, No. 8, pp. 2109-2120, 2016. [Best Paper Award] (doi: <https://doi.org/10.1587/transinf.2016EDP7065>)

### Book Series

13. Kraithep Sirisanwannakul, Nutchanon Siripool, Waree Kongprawechnon, Prachumpong Dangsakul, Udom Lewlomphaisarl, Seksun Sartsatit, Thanika Duangtanoo, Suthum Keerativittayanun, Wida Susanty Haji Suhaili, Yasunori Owada, Khin Than Mya, Sharifah H. S. Ariffin, and **Jessada Karnjana**, "Humidity Sensor Drift Detection and Correction Based on a Kalman Filter with an Artificial Neural Network for Commercial Cultivation of Tropical Orchids," *Computational Intelligence in Information Systems: Proceedings of the Computational Intelligence in Information Systems Conference (CIIS 2020)*, Springer, 2021. (doi: [https://doi.org/10.1007/978-3-030-68133-3\\_14](https://doi.org/10.1007/978-3-030-68133-3_14))
14. Kittikom Sangrit, Kanokvate Tungpimolrut, Udom Lewlomphaisarl, Montri Chatpoj, **Jessada Karnjana**, Ken T. Murata, Wida Susanty Haji Suhaili, Jennifer Dela Cruz, Fredmar Asarias, Phoumixay Siharath, Daoheung Bouangeune, and Thin Lai Lai Thein, "Experiments on LoRa Communication Used in a Relay Station Network for Disaster Management," *Computational Intelligence in Information Systems: Proceedings of the Computational Intelligence in Information Systems Conference (CIIS 2020)*, Springer, 2021. (doi: [https://doi.org/10.1007/978-3-030-68133-3\\_22](https://doi.org/10.1007/978-3-030-68133-3_22))
15. Pitisit Dillon and **Jessada Karnjana**, "Rockfall Detection from Terrestrial LiDAR Point Clouds by Using DBSCAN with Clutter Removal Based on Grid Density," *Computational Intelligence in Information Systems: Proceedings of the Computational Intelligence in Information Systems Conference (CIIS 2020)*, Springer, 2021. (doi: [https://doi.org/10.1007/978-3-030-68133-3\\_13](https://doi.org/10.1007/978-3-030-68133-3_13))
16. Asadang Tanatipuknon, Pakinee Aimmanee, Suthum Keerativittayanun, and **Jessada Karnjana**, "Unsupervised Change Detection in Multi-temporal Satellite Images Based on Structural Patch Decomposition and k-means Clustering for Landslide Monitoring," *Integrated Uncertainty in Knowledge Modelling and Decision Making, IUKM 2020, Lecture Notes in Computer Science*, Vol. 12482, Springer, 2020. (doi: [https://doi.org/10.1007/978-3-030-62509-2\\_22](https://doi.org/10.1007/978-3-030-62509-2_22))
17. Nutchanon Siripool, Kraithep Sirisanwannakul, Waree Kongprawechnon, Prachumpong Dangsakul, Anuchit Leelayuttho, Sommai Chokrung, Jakkaphob Intha, Suthum Keerativittayanun, and **Jessada Karnjana**, "Relative Humidity Estimation Based on Two Nested Kalman Filters with Bicubic Interpolation for Commercial Cultivation of Tropical Orchids," *Neural Information Processing, ICONIP 2020, Communications in Computer and Information Science*, Vol 1333, Springer, 2020. (doi: [https://doi.org/10.1007/978-3-030-62509-2\\_17](https://doi.org/10.1007/978-3-030-62509-2_17))
18. Prachumpong Dangsakul, Nutchanon Siripool, Kraithep Sirisanwannakul, Rachaporn Keinprasit, Khonpan Rungprateeptaworn, Suthum Keerativittayanun, and **Jessada Karnjana**, "Humidity Sensor Accuracy Improvement Based on Two Nested Kalman Filters for Commercial Cultivation of Tropical Orchids," *Neural Information Processing, ICONIP 2020, Communications in Computer and Information Science*, Vol 1333, Springer, 2020. (doi: [https://doi.org/10.1007/978-3-030-63823-8\\_13](https://doi.org/10.1007/978-3-030-63823-8_13))
19. **Jessada Karnjana**, Thanika Duangtanoo, Seksun Sartsatit, Sommai Chokrung, Anuchit Leelayuttho, Kasorn Galajit, Asadang Tanatipuknon, and Pitisit Dillon, "Improving Accuracy of Dissolved Oxygen Measurement in an Automatic Aerator-Control System for Shrimp Farming by Kalman Filtering," *Computational Intelligence in Information Systems: Proceedings of the Computational Intelligence in Information Systems Conference (CIIS 2018)*. Vol. 888. Springer, 2018. [Best Session Paper Award] (doi: [https://doi.org/10.1007/978-3-030-03302-6\\_13](https://doi.org/10.1007/978-3-030-03302-6_13))
20. Kasorn Galajit, **Jessada Karnjana**, Pakinee Aimmanee, and Masashi Unoki, "Digital Audio Watermarking Method Based on Singular Spectrum Analysis with Automatic Parameter Estimation Using a Convolutional Neural Network,"

Advances in Intelligent Information Hiding and Multimedia Signal Processing - Proceeding of the Fourteenth International Conference on Intelligent Information Hiding and Multimedia Signal Processing, November 26-28, 2018, Sendai, Japan, Volume 1/2. [Best Paper Award] (doi: [https://doi.org/10.1007/978-3-030-03748-2\\_8](https://doi.org/10.1007/978-3-030-03748-2_8))

21. **J. Karnjana**, M. Unoki, P. Aimmanee, and C. Wutiwiwatchai, "Tampering Detection in Speech Signals by Semi-Fragile Watermarking Based on Singular-Spectrum Analysis," in Advances in Intelligent Information Hiding and Multimedia Signal Processing, Smart Innovation, Systems and Technologies, Volume 63, pp. 131-140, 2017. (doi: [https://doi.org/10.1007/978-3-319-50209-0\\_17](https://doi.org/10.1007/978-3-319-50209-0_17))
22. **J. Karnjana**, M. Unoki, P. Aimmanee, and C. Wutiwiwatchai, "An Audio Watermarking Scheme Based on Singular-Spectrum Analysis," in Digital-Forensics and Watermarking, LNCS 9023, pp. 145-159, 2015. (doi: [https://doi.org/10.1007/978-3-319-19321-2\\_11](https://doi.org/10.1007/978-3-319-19321-2_11))

## International Conference

23. Vichathorn Piyathanavong, Jose Arturo Garza-Reyes, Van-Nam Huynh, Sun Olapiriyakul, and **Jessada Karnjana**, "Circular Economy: Exploratory Study of Steel Industry in Thailand," in the 11th IEOM, 2021. (Accepted)
24. Candy Olivia Mawalim, Kasorn Galajit, **Jessada Karnjana**, and Masashi Unoki, "X-Vector Singular Value Modification and Statistical-Based Decomposition with Ensemble Regression Modeling for Speaker Anonymization System," in VoicePrivacy challenge, Interspeech, 2020. (doi: <http://dx.doi.org/10.21437/Interspeech.2020-1887>)
25. S. Doungpummet, C. Phunruangsakao, P. Kraikhun, **J. Karnjana**, W. Kongprawechnon, and M. Unoki, "Speech Privacy Protection based on Optimal Controlling Estimated Speech Transmission Index in Noisy Reverberant Environment," in EUSIPCO, 2020. (doi: <http://dx.doi.org/10.23919/Eusipco47968.2020.9287627>)
26. Pantid C., Sasiporn U., **Jessada K.**, Surasak B., Suthum K., Anocha R., and Takahiro S., "Speech Activity Detection Using a Fusion of Dense Convolutional Network in the Movie Audio," in ITC-CSCC, 2020. (IEEE Xplore: <https://ieeexplore.ieee.org/abstract/document/9183125>)
27. C. Phunruangsakao, P. Kraikhun, S. Doungpummet, **J. Karnjana**, W. Kongprawechnon, and M. Unoki, "A Speech Privacy Protection based on Controlling Estimated Speech Transmission Index," in Proc. ECTI-CON, 2020. (doi: <https://dx.doi.org/10.1109/ECTI-CON49241.2020.9158131>)
28. Panuwit N., Ekachai P., **Jessada K.**, Surasak B., Suthum K., Anocha R., Sasiporn U., and Takahiro S., "A Light-weight ANN for Speech Emotion Recognition using Average Values of MFCCs and their Derivatives," in Proc. ECTI-CON, 2020. (doi: <https://dx.doi.org/10.1109/ECTI-CON49241.2020.9158221>)
29. Parinya Khansong, **Jessada Karnjana**, Seksun Laitrkun, and Sasiporn Usanavasin, "Using Data Mining Predictive Models to Classify Residential Electricity User Based on Billing Behaviour," in Proc. ECTI DAMT and NCON, 2020. (doi: <https://dx.doi.org/10.1109/ECTIDAMTCON48261.2020.9090699>)
30. Kamin Atsavasilert, Thanaruk Theeramunkong, Sasiporn Usanavasin, Anocha Rugchatjaroen, Surasak Boonkla, **Jessada Karnjana**, Suthum Keerativittayanun, and ManabuOkumura, "A Light-weight Deep Convolutional Neural Network for Speech Emotion Recognition using Mel-Spectrograms," in Proc. ISAI-NLP, 2019. [Best Paper Award] (doi: <https://dx.doi.org/10.1109/ISAI-NLP48611.2019.9045511>)
31. Suthum Keerativittayanun, Kittikom Sangrit, Pattanun Srisukanun, and **Jessada Karnjana**, "Image Enhancement Techniques Based on Human Visual Perception and Multi-exposure Fusion for a Landslide-prone Area Monitoring System," in Proc. SICE, 2019. (doi: <https://dx.doi.org/10.23919/SICE.2019.8859933>)
32. Suradej Duangpummet, **Jessada Karnjana**, Waree Kongprawechnon, and Masashi Unoki, "A Robust Method for Blindly Estimating Speech Transmission Index using Convolutional Neural Network with Temporal Amplitude Envelope," in Proc. APSIPA, 2019. (doi: <https://dx.doi.org/10.1109/APSIPAASC47483.2019.9023209>)
33. Rattamontree Burimas, Tidanat Kumpuak, Mongkonchai Intarauksorn, Kasorn Galajit, Pakinee Aimmanee, and **Jessada Karnjana**, "Framework for Hiding Information in Audio Sub-signals by Using Singular Spectrum Analysis with Psychoacoustic Model," in Proc. ICGSP, 2019. (doi: <https://doi.org/10.1145/3338472.3338488>)
34. Asadang Tanatipuknon and **Jessada Karnjana**, "A Study on Applying an Autoregressive Model with the Kalman Filtering in Accuracy Improvement of Dissolved Oxygen Measurement," in Proc. ISAI-NLP, 2018. (doi: <https://dx.doi.org/10.1109/ISAI-NLP.2018.8692991>)

35. Kittikom Sangrit, Tidanat Kumpuak, Suthum Keerativittayanun, and **Jessada Karnjana**, "Blind, SVD-based Scheme for Information Hiding in Digital Image," in Proc. iSAI-NLP, 2018. (doi: <https://dx.doi.org/10.1109/iSAI-NLP.2018.8692993>)
36. Kasorn Galajit, Mongkonchai Intarauksorn, **Jessada Karnjana**, Pakinee Aimmanee, and Masashi Unoki, "Speech Watermarking Technique Based on Singular Spectrum Analysis and Automatic Parameter Estimation Using Differential Evolution for Tampering Detection," in Proc. iSAI-NLP, 2018. [Best Paper Award, Best Presentation Award] (doi: <https://dx.doi.org/10.1109/iSAI-NLP.2018.8692877>)
37. Kasorn Galajit, Pitisit Dillon, Suradej Duangpummet, Jakkaphob Intha, Prachumpong Dangsakul, Khongpan Rungprateepthaworn, Rachaporn Keinprasit, and **Jessada Karnjana**, "Prediction of Dissolved Oxygen Concentration for Shrimp Farming Using Quadratic Regression and Artificial Neural Network," in Proc. iSAI-NLP, 2018. [Best Paper Award] (doi: <https://dx.doi.org/10.1109/iSAI-NLP.2018.8692921>)
38. **Jessada Karnjana**, Kasorn Galajit, Pakinee Aimmanee, Chai Wutiwiwatchai, and Masashi Unoki, "Speech Watermarking Scheme Based on Singular-Spectrum Analysis for Tampering Detection and Identification," in Proc. APSIPA, 2017. (doi: <https://dx.doi.org/10.1109/APSIPA.2017.8282027>)
39. Kasorn Galajit, Thanika Duangtanoo, Khongpan Rungprateepthaworn, Seksun Sartsatit, Prachumpong Dangsakul, and **Jessada Karnjana**, "Flexible and Automatic Aerator-control System for Shrimp Farming in Thailand," in Proc. Advanced Research in Electrical and Electronic Engineering Technology (ARIEET), 2017.
40. Sasima Yoochareeon, Alice Sharp, Suttisak Sorulump, and **Jessada Karnjana**, "Preliminary Landslide Investigation in View of Geology and Slope Stability of Highway 1390, Doi Tung, Chiang Rai, Thailand," GMSARN Int. Conf. on Energy Connectivity, Environment, and Development in GMS, 2017. (<http://www.gmsarn.com/conference2017/>)
41. Katekanya Tasuwan, Alice Sharp, and **Jessada Karnjana**, "The Study of the Effects of Vegetation on Slope Stabilization for Landslide Prevention in Thailand," GMSARN Int. Conf. on Energy Connectivity, Environment, and Development in GMS, 2017. (<http://www.gmsarn.com/conference2017/>)
42. Preechaya Kittipakawat, Suttisak Sorulump, Alice Sharp, **Jessada Karnjana**, and Masashi Matsuoka, "Assessment of Landslide Susceptibility Area using RS and GIS," GMSARN Int. Conf. on Energy Connectivity, Environment, and Development in GMS, 2017. (<http://www.gmsarn.com/conference2017/>)
43. Piyawat Sukhummek, **Jessada Karnjana**, Sawit Kasuriya, Chai Wutiwiwatchai, and Thanaruk Theeramunkong, "A Comparative Annotator-agreement Analysis of Emotional Speech Corpora," KSS, 2017. (<https://saki.siiit.tu.ac.th/kss2017/app/webroot/KSS2017-abstractbook.pdf>)
44. Suradej Duangpummet and **Jessada Karnjana**, "Lithium Battery State-of-Charge Estimation Based on Theory of Evidence with Interval Analysis," in Proc. SICE, pp. 1290-1296, 2017. (doi: <https://dx.doi.org/10.23919/SICE.2017.8105727>)
45. S. Keerativittayanun, K. Kotani, T. Kondo, T. Phatrapornnat, and **J. Karnjana**, "Less-Visible Contrast Enhancement Based on a Non-Linear Scaling Function and Singular Spectrum Analysis," DICTA, 2016. (doi: <https://dx.doi.org/10.1109/DICTA.2016.7797059>)
46. **J. Karnjana**, M. Unoki, P. Aimmanee, and C. Wutiwiwatchai, "SSA-based Audio-Information-Hiding Scheme with Psychoacoustic Model," APSIPA, 2016. (doi: <https://dx.doi.org/10.1109/APSIPA.2016.7820686>)
47. **J. Karnjana**, P. Aimmanee, M. Unoki, and C. Wutiwiwatchai, "An Audio Watermarking Scheme based on Automatic Parameterized Singular-Spectrum Analysis Using Differential Evolution," in Proc. APSIPA, pp. 543-551, 2015. (doi: <https://dx.doi.org/10.1109/APSIPA.2015.7415329>)
48. M. Unoki, **J. Karnjana**, S. Wang, N.M. Ngo, and R. Miyauchi, "Comparative Evaluations of Inaudible and Robust Watermarking for Digital Audio Signal," in Proc. 21<sup>st</sup> International Congress on Sound and Vibration, China, Jul. 2014.

## Domestic Conference

49. Suthum Keerativittayanun, Ken T. Murata, **Jessada Karnjana**, "Image Fusion Method Used in Monitoring Landslide-prone Areas with a Visual IoT Camera System," 58<sup>th</sup> Annual Meeting of Japan Landslide Society, 2019.
50. Galajit, K., **Karnjana, J.**, Aimmanee, P., & Unoki, M., "Study on singular spectrum analysis-based speech watermarking technique with parameter estimation using differential evolution," Spring Meeting Acoustic Society of Japan (ASJ), 2019.

51. Galajit, K., **Karnjana, J.**, Aimmanee, P., & Unoki, M., "Study on singular spectrum analysis-based speech watermarking technique with parameter estimation using differential evolution," IEICE Tech. Rep., 118(382), pp 25-30, 2019.
52. S. Doungpummet, **J. Karnjana**, W. Kongprawechnon, and M. Unoki, "Blind Estimation of Speech Transmission Index in Noisy Reverberant Environment using Deep Learning with Modulation Spectrum," in Acoustic Society of Japan, 2019.
53. S. Doungpummet, **J. Karnjana**, W. Kongprawechnon, and M. Unoki, Study on Robust Method for Blindly Estimating Speech Transmission Index using Convolutional Neural Network with Temporal Amplitude Envelope, in Engineering Acoustics, IEICE at Tohoku Univ., no.163 pp.47-52, 2019.
54. **J. Karnjana** and M. Unoki, "Singular-Spectrum-Analysis-Based Speech Watermarking for Tampering Detection," IEICE Tech. Rep., 116 (303), pp.55-60, 2016.
55. **J. Karnjana**, M. Unoki, P. Aimmanee, and C. Wutiwiwatchai, "Study on Audio Watermarking Scheme based on Singular-Spectrum Analysis and Psychoacoustic Model," The 2016 Autumn meeting of the Acoustical Society of Japan, in CD-ROM, pp. 531-534, 2016.
56. **J. Karnjana**, P. H. B. Nhien, S. Wang, N. M. Ngo, and M. Unoki, "Comparative Study on Robustness of Synchronization Information Embedded into an Audio Watermarked Frame," IEICE Tech. Rep., 115 (479), pp. 41-44, 2016.
57. **J. Karnjana** and M. Unoki, "Methods for Concavity Detection in Singular Spectrum," IEICE Tech. Rep., 115 (479), pp. 105-110, 2016.
58. **J. Karnjana**, M. Unoki, P. Aimmanee, and C. Wutiwiwatchai, "Study on Audio Watermarking Scheme Based on Singular-Spectrum Analysis," IEICE Tech. Rep. 114 (424), pp. 27-32, 2015.
59. **J. Karnjana**, M. Unoki, S. Wang, N.M. Ngo, and R. Miyauchi, "Comparative Evaluations of Inaudible and Robust Watermarking Methods for Digital-Audio Signals," IEICE Tech. Rep. 113 (480), pp. 63-68, 2014.

## Presentations

1. **Jessada Karnjana**, "Low-power Wireless Sensor Network Platform for a Smart Watering System and Its Applications," 51<sup>st</sup> Asia Pacific Advanced Network Virtual Meeting, Islamabad, Pakistan, Feb. 1-5, 2021. (Online, oral presentation)
2. **Jessada Karnjana**, "Real-time Monitoring System Based on Wireless Sensor Networks for Landslide-prone Areas," International Conference on Silk-road Disaster Risk Reduction and Sustainable Development, Beijing, China, May 11-12, 2019. (Oral presentation)
3. **Jessada Karnjana**, "Landslide Preparedness in the ASEAN Member States: A Data Fusion Approach to Real-time Monitoring System and Information Management," 5<sup>th</sup> Symposium on JASTIP Disaster Prevention International Cooperation Research, Kuala Lumpur, Malaysia, Oct. 16-19, 2018. (Oral presentation)
4. **Jessada Karnjana**, "Landslide Preparedness in the ASEAN Member States: A Data Fusion Approach to Real-time Monitoring System and Information Management," Regional Consultation on Achieving Sustainable Development Goals through Science, Technology, and Innovation, ASEAN Next, Bangkok, Thailand, Mar. 20, 2018. (Oral presentation)
5. **Jessada Karnjana** and Yasunori Owada, "A mesh-topological, low-power wireless network platform for a smart watering system," ASEAN IVO Forum, Radisson Hotel Brunei Darussalam, Bandar Seri Begawan, Brunei, Nov. 23, 2017. (Oral presentation)
6. **Jessada Karnjana**, "The Embedded System Technology Lab.: A Very Short Introduction," Southeast Asia International Joint Research and Training Program 2016, Taiwan, Dec. 4-9, 2016. (Oral presentation)
7. **J. Karnjana** and M. Unoki, "An SSA-Based Audio Watermarking Scheme with Automatic Frame Detection," RIEC International Symposium on Ultra-Realistic Interactive Acoustic Communication 2016, Miyagi Zao Royal Hotel, Miyagi, Japan, May 20-21, 2016. (Poster presentation)
8. **J. Karnjana**, "SSA-Based Audio Watermarking with Automatic Parameterization and Parameter Estimation," HLD International Symposium, Kanazawa Bunka Hall, Ishikawa, Japan, Mar. 26-29, 2016. (Poster presentation)
9. **J. Karnjana** and M. Unoki, "Automatic Parameter Estimation for SSA-based Audio Watermarking," RIEC-JAIST Workshop, Ishikawa High-Tech Exchange Center, Ishikawa, Japan, Feb. 28-29, 2016. (Oral presentation)

10. **J. Karnjana** and M. Unoki, "An Audio Watermarking Scheme Based on Automatic Parameterized Singular-Spectrum Analysis Using Differential Evolution," The 4th Workshop of A3 Foresight Program: Ultra-realistic Acoustic Interactive Communication on Next-generation Internet, Seoul National University, Korea, Jan. 28-30, 2016. (Oral presentation)
11. **J. Karnjana**, "An Audio Watermarking Scheme Based on Singular-Spectrum Analysis," JAIST Symposium on Advanced Science and Technology (JAIST-SAST2015), JAIST, Ishikawa, Japan, Nov. 10-12, 2015. (Online-published abstract, Poster presentation)
12. **J. Karnjana** and M. Unoki, "An Audio Watermarking Scheme Based on Singular-Spectrum Analysis," The 8th seminar of A3 foresight program: Ultra-realistic Acoustic Interactive Communication on Next-generation Internet, Kitakyushu International Conference Center, Japan, Aug. 27-29, 2014. (Oral presentation)

\*\*\*

การเป็นคณะกรรมการ/คณะอนุกรรมการ/คณะทำงาน/ที่ปรึกษา ที่ได้รับการแต่งตั้ง (ศูนย์เทคโนโลยีอิเล็กทรอนิกส์และคอมพิวเตอร์แห่งชาติ)

- |      |   |
|------|---|
| 2562 | คณะทำงานจัดการประกวดโครงงานของนักวิทยาศาสตร์รุ่นเยาว์ ครั้งที่ 21 (คำสั่ง ศอ. ที่ 12/2562)<br>คณะกรรมการตัดสินการประกวดโครงงานของนักวิทยาศาสตร์รุ่นเยาว์ ครั้งที่ 21 (คำสั่ง ศอ. ที่ 13/2562)<br>คณะทำงานจัดการประกวดวงจรรณีอิเล็กทรอนิกส์รุ่นเยาว์ ครั้งที่ 18 (คำสั่ง ศอ. ที่ 7/2562)   |
| 2561 | คณะทำงานจัดการประกวดวงจรรณีอิเล็กทรอนิกส์รุ่นเยาว์ ครั้งที่ 17 (คำสั่ง ศอ. ที่ 8/2561)<br>คณะทำงานจัดการประกวดโครงงานของนักวิทยาศาสตร์รุ่นเยาว์ ครั้งที่ 20 (คำสั่ง ศอ. ที่ 11/2561)<br>คณะกรรมการกำกับดูแลโครงการ The Thailand Alliances of Advanced Institutions of Science and Technology and Japan Advanced Institute of Science and Technology (TAIST-JAIST) (คำสั่ง สวทช. ที่ 199/2561) |
| 2560 | คณะทำงานจัดการประกวดวงจรรณีอิเล็กทรอนิกส์รุ่นเยาว์ ครั้งที่ 16 (คำสั่ง ศอ. ที่ 3/2560)<br>คณะทำงานจัดการประกวดโครงงานของนักวิทยาศาสตร์รุ่นเยาว์ ครั้งที่ 19 (คำสั่ง ศอ. ที่ 7/2560)   |
| 2558 | คณะทำงานจัดการแข่งขันประกอบวงจรรณีอิเล็กทรอนิกส์ ครั้งที่ 14 (คำสั่ง ศอ. ที่ 14/2557)   |
| 2556 | คณะทำงานจัดการแข่งขันประกอบวงจรรณีอิเล็กทรอนิกส์ ครั้งที่ 12 (คำสั่ง ศอ. ที่ 4/2556)  |
| 2555 | คณะทำงานจัดการแข่งขันประกอบวงจรรณีอิเล็กทรอนิกส์ ครั้งที่ 11 ในงานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 11 (คำสั่ง ศอ. ที่ 19/2555)<br>คณะทำงานกำหนดขอบเขตเนื้อหาด้านอิเล็กทรอนิกส์เบื้องต้น โครงการค่ายนักอิเล็กทรอนิกส์รุ่นเยาว์ (NECTEC eCamp) (คำสั่ง ศอ. ที่ 49/2555)  |
| 2554 | คณะทำงานจัดการแข่งขันประกอบวงจรรณีอิเล็กทรอนิกส์ ครั้งที่ 10 (คำสั่ง ศอ. ที่ 4/2554)  |
| 2553 | คณะทำงานจัดการแข่งขันประกอบวงจรรณีอิเล็กทรอนิกส์ ครั้งที่ 9 ในงานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 9 (คำสั่ง ศอ. ที่ 2/2553)  |
| 2552 | คณะทำงานตัดสินการแข่งขันประกอบวงจรรณีอิเล็กทรอนิกส์ ครั้งที่ 8 การจัดงานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 8 (คำสั่ง ศอ. ที่ 5/2552)   |
| 2551 | คณะทำงานจัดการแข่งขันประกอบวงจรรณีอิเล็กทรอนิกส์ ครั้งที่ 7 งานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 7 (คำสั่ง ศอ. ที่ 11/2551)<br>คณะทำงานจัดการประกวดโครงงานของนักวิทยาศาสตร์รุ่นเยาว์ (YSC2008) ในงานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 7 (คำสั่ง ศอ. ที่ 13/2551)  |

- คณะกรรมการตัดสินการแข่งขันประกอบวงจรถอดเขียนอิเล็กทรอนิกส์ ครั้งที่ 7 ในงานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 7 (คำสั่ง ศอ. ที่ 14/2551)
- คณะกรรมการจัดการแข่งขันประกอบวงจรถอดเขียนอิเล็กทรอนิกส์ ครั้งที่ 8 ในงานมหกรรม ICT แห่งประเทศไทย ครั้งที่ 8 (คำสั่ง ศอ. ที่ 134/2551)
- 2550 คณะกรรมการตัดสินการแข่งขันประกอบวงจรถอดเขียนอิเล็กทรอนิกส์ การจัดงานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 6 (คำสั่ง ศอ. ที่ 16/2550)
- คณะกรรมการจัดการประกวดโครงงานของนักวิทยาศาสตร์รุ่นเยาว์ (YSC 2007) การจัดงานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 6 (คำสั่ง ศอ. ที่ 17/2550)
- คณะกรรมการตัดสินการประกวดโครงงานของนักวิทยาศาสตร์รุ่นเยาว์ (YSC 2007) รอบชิงชนะเลิศ งานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 6 (คำสั่ง ศอ. ที่ 18/2550)
- 2549 คณะทำงานโครงการค่ายนักอิเล็กทรอนิกส์รุ่นเยาว์ : NECTEC eCamp (คำสั่ง ศอ. ที่ 71/2549)
- 2548 คณะกรรมการตัดสินการแข่งขันประกอบวงจรถอดเขียนอิเล็กทรอนิกส์การจัดงานมหกรรมเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 4 (คำสั่ง ศอ. ที่ 10/2548)
- คณะกรรมการวิชาการรายการแข่งขันตอบปัญหา "อัจฉริยะไอที (IT Genius)" (คำสั่ง ศอ. ที่ 19/2548)
- 2547 คณะทำงานการแข่งขันประกอบวงจรถอดเขียนอิเล็กทรอนิกส์ การจัดงานมหกรรมประกวดเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) แห่งประเทศไทย ครั้งที่ 3 (คำสั่ง ศอ. ที่ 3/2547)
- คณะกรรมการวิชาการรายการแข่งขันตอบปัญหา "อัจฉริยะไอที (IT Genius)" (คำสั่ง ศอ. ที่ 51/2547)
- คณะกรรมการจัดการประชุมวิชาการและนิทรรศการ "สัปดาห์วิทยาศาสตร์และเทคโนโลยีแห่งชาติ" ด้าน ECTI Technology และ Smart card & RFID (คำสั่ง ศอ. ที่ 95/2547)
- 2545 คณะทำงานฝ่ายจัดกิจกรรมงานชุมนุมลูกเสือโลก งานเมืองวิทยาศาสตร์หัวข้อเทคโนโลยีสารสนเทศและการสื่อสาร (ICT) (คำสั่ง ศอ. ที่ 81/2545)
- 2544 คณะทำงานด้านเทคนิคการแข่งขันเลือกซื้อและประกอบคอมพิวเตอร์และกิจกรรมการแข่งขันติดตั้งระบบปฏิบัติการลินุกซ์ (NECTEC Linux Installation Competition: NLC) สำหรับงานมหกรรมประกวดไอซีทีแห่งประเทศไทย (คำสั่ง ศอ. ที่ 75/2544)

\*\*\*

### รางวัลที่ได้รับ (ศูนย์เทคโนโลยีอิเล็กทรอนิกส์และคอมพิวเตอร์แห่งชาติ)

- 2553 SCAMPI A CMMI V1.2 ML 3 Software Engineering Institute, Carnegie Mellon

\*\*\*

### งานอดิเรกที่เกี่ยวกับหนังสือ

#### 1. งานแปล

- 1.1. *ฟิสิกส์ 6 บทสุดง่าย* (2553) แปลจาก *Six Easy Pieces* เขียนโดย Richard Feynman แปลร่วมกับบัญญัติ ตีพิมพ์โดยสำนักพิมพ์สารคดี (สัดส่วนที่แปล 50%)
- 1.2. *ไอน์สไตน์ ชีวิตประวัติและจักรวาล* (2556) แปลจาก *Einstein: His Life and Universe* เขียนโดย Walter Isaacson แปลร่วมกับบัญญัติ ตีพิมพ์โดยสำนักพิมพ์สมมติ, รัชชชัย ดุลยสุจริต, และเยาวลักษณ์ ภูอภิรมย์ ตีพิมพ์โดยสำนักพิมพ์เนชั่นบุ๊คส์ (สัดส่วนที่แปล 29.09%)
- 1.3. *13 Things That Don't Make Sense* เขียนโดย Michael Brooks แปลให้สำนักพิมพ์วีเลิร์น (ยังไม่ได้ตีพิมพ์)

