

"Knowledge Evolution Towards Singularity of Man-Machine Intelligence"

Organized by

Department of Mathematics and Computer Science, Faculty of Science, Chulalongkom University, Thailand Faculty of Informatics, Burapha University, Thailand.

2019 **JCSSE**

The 16" International Joint Conference on Computer Science and Software Engineering

July 10 - 12, 2019 Amari Pattaya, Chonburi, Thailand.

ISBN 978-1-7281-0719-9



Keynote	Title	Page
Keynote-I	Business Transformation with Blockchain by Professor Dr.Dusit Niyato	XXIV
Keynote-II	Matching Next-Gen HPC with Target Applications by Professor Dr. Pascal Bouvry	XXV
Paper ID	Title	Page
1570538175	Hybrid EEG-fEMG based Human-Machine Interface for Communication and Control Applications by Kessarabhorn Chuysud and Yunyong Punsawad	1
1570547231	Circular Vector Field Analysis for the Adaptive Diffusion Flow Snakes Applied to Ultrasound Images of Breast Cancer by Annupan Rodtook and Khwunta Kirimasthong	6
1570547324	A Linear-time Algorithm for Optimal Tree Completion by Chawin Aiemvaravutigul and Nonthaphat Wongwattanakij	11
1570537927	Thai Handwriting Beautification by Supawan Tasanaprasert and Karun Tonmaithong	17
1570528296	Discovering Factors Associated with Online Gaming Behaviors by Bernardinus Harnadi	21
1570529455	Enhancing a Keyword Search Using Segmentation and Similarity Measure Algorithms: A Case Study of Phuket Attractions by Kitsiri Chochiang and Witaya Khuanwilai	26
1570537320	ARCode: Augmented Reality Application for Learning Elementary Computer Programming by Sirawit Sittiyuno and Kornchawal Chaipah	32

Paper ID	Title	Page
1570542545	Web-based Elderly Monitoring System with GIS by Anirut Sriwichian, Veera Boonjing, Jirapond Muangprathub and Pichetwut Nillaor	38
1570542664	A Result Verification of Decision Tree Model for Industrial Wireless Sensors Selection using Analytic Hierarchy Process by Saksiri Meesawad, Bundit Thanasopon and Olarn Wongwirat	43
1570542733	An Ontology for SNORT Rule by Assadarat Khurat and Wudhichart Sawangphol	49
1570542789	An Information Integration System to Continuing of Care Case study Nongsung Hospital, Mukdahan THAILAND by Pranithan Klangprapunt and Pusadee Seresangtakul	55
1570542908	WhatTheHealth: An Android Application for Consumers of Healthy Food by Songsri Tangsripairoj, Nonthpat Wongkham, Bongkotmanee Leelalerkiat and Sarun Chuenpukdi	61
1570543015	Game Elements to Promote Walking in Thais Working Adults by Sakchai Muangsrinoon and Poonpong Boonbrahm	67
1570543074	Condition Based Maintenance for Data Center Operations Management by Montri Wiboonrat	73
1570547326	Practical Differential Privacy for Location Data Aggregation using a Hadamard Matrix by Patinya Sangiamchit and Jittat Fakcharoenphol	79
1570542774	IVAA: Intelligent Vehicle Accident Analysis System by Kundjanasith Thonglek, Norawit Urailertprasert, Patchara Pattiyathanee and Chantana Chantrapornchai	85

Paper ID	Title	Page
1570542836	DATA++: An Automated Tool for Intelligent Data Augmentation Using Wikidata by Waran Taveekarn, Chatchanin Yimudom, Supisara Sukkanta, Steven Lynden, Wudhichart Sawangphol and Suppawong Tuarob	91
1570542940	Multi-Paths Generation for Structural Rule Quests by Thongtham Chongmesuk and Vishnu Kotrajaras	97
1570542954	Kiddy Manner: A Game-Based Mobile Application for Children Learning Thai Social Etiquette by Songsri Tangsripairoj, Mathawee Sukkhet, Jidapa Sumanotham and Benya Yusuk	103
1570543067	Speech-to-Thai Sign Language Conversion for Thai Deaf: A Case Study of Crime News by Nattapol Namyang, Jarukit Lumpaolertwilai and Suphakant Phimoltares	109
1570543079	Semi-Automatic Word-Aligned Tool for Thai-Vietnamese Par- allel Corpus Construction by Dang Ngoc Chuong and Pusadee Seresangtakul	115
1570527283	Development of Reliable Wireless Communication System for Secure Blockchain-based Energy Trading by Zhuoxian Huang, Kongrath Suankaewmanee, Jiawen Kang, Dusit Niyato and Pei Sin Ng	120
1570542701	An In-Memory Checkpoint-Restart Mechanism for a Cluster of Virtual Machines by Jumpol Yaothanee and Kasidit Chanchio	125
1570542745	Moving Object Detection using Integrated Spatial and Motion-Based Method by Manit Chansuparp and Kulsawasd Jitkajornwanich	131
1570543979	Estimating the new Initial Value of Trial Division Algorithm for Balanced Modulus to Decrease Computation Loops by Kritsanapong Somsuk, Thanapat Chiawchanwattana and Chalida Sanemueang	137

Paper ID	Title	Page
1570546542	A DIFF-Based Indoor Positioning System Using Fingerprinting Technique and K-Means Clustering Algorithm by Apichon Anuwatkun, Jirapat Sangthong and Sommart Sang-Ngern	142
1570547233	Enhanced DDoS Detection using Hybrid Genetic Algorithm and Decision Tree for SDN by Parinya Preamthaisong, Anucha Auyporntrakool, Phet Aimtongkham, Titaya Sriwuttisap and Chakchai So-In	146
1570542673	The Control Model for Environmental Factor Effecting on Growth of St. Johns wort by Narongsak Lekbangpong, Theera Srisawa, Apirat Wanichsombat and Jirapond Muangprathu	152
1570543106	A Low-Cost RTK GNSS Receiver with Cloud-Based Control Center Application by Duangduen Asavasuthirakul, Sittha Saisawan, Antony Harfield and Prasert Wiangsukphaiboon	158
1570528326	Development of Behavior Monitoring System for Honeybees in Hive Using RFID sensors and Image Processing by Shinya Takahashi, Koji Hashimoto, Sakashi Maeda, Yujie Li, Naoyuki Tsuruta and Hiroyuki Ai	164
1570536960	Analysis and Prediction of Temporal Twitter Popularity Using Dynamic Time Warping by Rattasit Sermsai and Sirisup Laohakiat	170
1570537018	Text Generation for Imbalanced Text Classification by Suphamongkol Akkaradamrongrat, Pornpimon Kachamas and Sukree Sinthupinyo	175
1570537322	Information Extraction based on Named Entity for Tourism Corpus by Chantana Chantrapornchai and Apisit Tunsakul	181
1570537371	Cross-Category Product Recommender System based on Multi-Criteria Rating using Diversity and Novelty Evaluation by Saranya Maneeroj, Pongsakorn Jirachanchaisiri, Chanisara Suksomjit and Apirom Zatloukal	187

Paper ID	Title	Page
1570538865	Physically-Based Modelling and Simulation of Track-based Main Battle Tank System for a realistic 3D Game by Yodthong Rodkaew	193
1570539829	Vehicle Logo Detection Using Sliding Windows with Sobel Edge Features and Recognition Using SIFT Features by Jatupon Benjaprakairat and Pakorn Watanachaturaporn	198
1570541149	Fake News Detection System using Article Abstraction by Kyeong-hwan Kim and Chang-Seong Jeong	203
1570542302	An Individual Local Mean-based 2DPCA for Face Recognition under Illumination Effects by Kangsadan Hancherngchai, Taravichet Titijaroonroj and Jaratsri Rungrattanaubol	207
1570542304	Modified Scale-Space Analysis in Frequency Domain Based on Adaptive Multiscale Gaussian Filter for Saliency Detection by Jenjira Jaemsiri, Taravichet Titijaroonroj and Jaratsri Rungrattanaubol	212
1570542305	Seven Segment Display Detection and Recognition using Pre-defined HSV Color Slicing Technique by Sorawee Popayorm, Taravichet Titijaroonroj, Thanathorn Phoka and Wansuree Massagram	218
1570542312	Quantitative Trading Machine Learning Using Differential Evolution Algorithm by Napas Vinitnantharat, Narit Incha, Thatthai Sakkumjor, Kitsada Doungjitjaroen and Chukiat Worasucheep	224
1570542529	Ensemble CNN and MLP with Nurse Notes for Intensive Care Unit Mortality by Aye Hninn Khine, Wiphada Wettayaprasit and Jarunee Duangsuwan	230
1570542534	Convolutional Neural Networks Using MobileNet for Skin Lesion Classification by Wannipa Sae-Lim, Wiphada Wettayaprasit and Pattara Aiyarak	236

Paper ID	Title	Page
1570542693	A Hotel Hybrid Recommendation Method based on Context- Driven using Latent Dirichlet Allocation by Weraphat Nimchaiyanan and Saranya Maneeroj	242
1570542719	Spatio-Temporal Deep Learning for Ocean Current Prediction Based on HF Radar Data by Nathachai Thongniran, Peerapon Vateekul, Kulsawasd Jitkajornwanich, Siam Lawawirojwong and Panu Srestasathiern	248
1570542737	Utilizing Google Translated Reviews from Google Maps in Sentiment Analysis for Phuket Tourist Attractions by Boonyanit Mathayomchan and Kunwadee Sripanidkulchai	254
1570542740	Thai Sign Language Recognition Using 3D Convolutional Neural Networks by Nutisa Sripairojthikoon and Jaturon Hansomboon	260
1570542979	Identifying an Original Copy of The Source Codes in Programming Assignments by Chawalit Saoban and Sunisa Rimcharoen	265
1570543012	Classification of Nutrient Deficiency in Black Gram Using Deep Convolutional Neural Networks by Kadipa Aung Myo Han and Ukrit Watchareeruetai	271
1570543029	An Open-source Based Automatic Car Detection System using IoT by Assadarat Khurat, Nappaphol Siriphun, Jiratchaya Saingthong and Jirapat Sriwiphasathit	277
1570543035	Natural Language Contents Evaluation System for Detecting Fake News using Deep Learning by Ye-chan Ahn and Chang-Sung Jeong	283
1570543077	A Hybrid Engine for Clinical Information Extraction from Radiology Reports by Er. Khushbu Gupta, Ratchainant Thammasudjarit and Ammarin Thakkinstian	287

Paper ID	Title	Page
1570543082	Classification of Anger Voice in Call Center Dialog by Widakorn Saewong and Janjao Mongkolnavin	292
1570547230	Classification of Fruit In a Box (FIB) Using Hybridization of Color and Texture Features by Jirapat Watcharasing, Thanaporn Thiralertphanich, Sasipa Panthuwadeethorn and Suphakant Phimoltares	297
1570547250	Graph Clustering with K-Nearest Neighbor Constraints by Wararat Jakawat and Raywat Makkhongkaew	303
1570547316	Optimizing a Number of Overlapping Items for Equating Estimated Item Parameters by Sarunya Deachnatee	308
1570547403	Region-Focus Training: Boosting Accuracy for Deep- Learning Image Segmentation by Chanok Pathompatai, Ratchadaporn Kanawong and Pinyo Taeprasartsit	313
1570542506	An Image-Based Vocabulary Learning System Based on Multi-Agent System by Preecha Tangworakitthaworn, Preeyapol Owatsuwan, Nutsima Nongyai and Nongnapas Arayapong	318
1570542924	Software Defect Detection Based On Selected Complexity Metrics Using Fuzzy Association Rule Mining and Defective Module Oversampling by Mohammad Naufal and Selvia Kusuma	324
1570546325	Automatic Question Generation With Classification Based On Mind Map by Selvia Ferdiana Kusuma, Daniel Oranova Siahaan, Chastine Fatichah and Mohammad Farid Naufal	330
1570547008	User Story Extraction from Online News for Software Requirements Elicitation: A Conceptual Model by Indra Kharisma Raharjana, Daniel Siahaan and Chastine Fatichah	336

Paper ID	Title	Page
1570547291	Sequence Diagram Similarity Measurement: A Different Approach by Evi Triandini, Reza Fauzan, Daniel O Siahaan and Siti Rochimah	342
1570537935	A Classification for Patients with Heart Disease Based on Hoeffding Tree by Sattarpoom Thaiparnit, Sorratha Kritsanasung and Narumol Chumuang	346
1570541402	The Method of Integrating Virtual Reality with Brainwave Sensor for an Interactive Math's Game by Erdhi Widyarto Nugroho and Bernardinus Harnadi	352
1570543027	Impacts of Camera Frame Pacing for Video Recording on Time-Related Applications by Nattapong Tangjui and Pinyo Taeprasartsit	357
1570543053	IoT-based Seven Segment Display Reader with Chessboard Calibration and Template Determination by Wansuree Massagram and Thanathorn Phoka	362
1570543059	Feature Reduction from Correlation Matrix for Classification of Two Basil Species in Common Genus by Varin Chouvatut and Supawit Wattanapairotrat	368
1570547314	Eye-Tracking Based Visualizations and Metrics Analysis for Individual Eye Movement Patterns by Rasa Bhattarai and Montri Phothisonothai	374
1570547322	Implementation the SoC of PCB Reflow Soldering by Thanat Sooknuan	378