



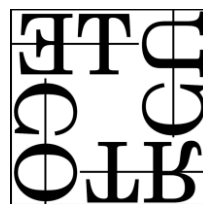
淡江大學
Tamkang University



**The International Conference on Recent Advancements in
Computing in AI, IoT and Computer Engineering Technology
(CICET 2019)**

Tamsui, Taipei, October 21-23, 2019

**Venue: Room E680, Main Engineering Building
Tamsui Campus, Tamkang University, Taipei, Taiwan**



CICET 2019 Chair's Welcome Message

It is our great pleasure to welcome you to participate in the International Conference on Recent Advancements in Computing, IoT and Computer Engineering Technology (CICET 2019) to take place on the Tamsui Campus of the Tamkang University, Taipei, Taiwan, October 21-23, 2019.

CICET 2019 provides a communication platform for researchers and practitioners both from academia and industry to share and disseminate their new research findings. CICET 2019 also serves as a good conventional conference in the areas covering the spectrum of Computing in AI, Internet of Things (IoT), Computer Engineering Technology and Big Data Analysis.

We would like to thank our colleagues Professors Jian-Nong Cao and Han-Chieh Chao who served as Honorary Chairs, also Professors Hui-Huang Hsu and Chien-Chang Chen who acted as Local Chairs. We wish to thank all program committee members, keynote speakers: Professors Steven Guan and Danny Hughes, the authors who submitted papers, speakers, as well as the conference attendees. This conference is held for you, and we thank you for your active participation and wish you to enjoy the conference with fruitful experience.

Finally, we strongly encourage researchers to contribute and make submissions to the next CICET conference.

Professor Ka Lok Man

Xi'an Jiaotong-Liverpool University, China and Swinburne University of Technology Sarawak, Malaysia

Dr. Woonkian Chong

SP Jain School of Global Management, Singapore

Chairs of CICET 2019



Date and Location

21-23 October 2019

**Location: Room E680, Main Engineering Building,
Tamsui Campus, Tamkang University (TKU)**

No.151, Yingzhuan Rd., Tamsui Dist., New Taipei City 25137, Taiwan (R.O.C.)

Host and Organizational Institution:

Tamkang University, Taiwan

Co-hosted:

AI University Research Centre (AI-URC) , Xi'an Jiaotong-Liverpool University, China

Research Institute of Big Data Analytics (RIBDA), Xi'an Jiaotong-Liverpool University, China

Supporters:

Swinburne University of Technology Sarawak Campus, Malaysia

Baltic Institute of Advanced Technology, Lithuania

Taiwanese Association for Artificial Intelligence, Taiwan

Trcuteco, Belgium

International Journal of Design, Analysis and Tools for Integrated Circuits and Systems

DATICS Research Group

Conference Website: <http://datics.org/cicet2019>

Introduction to the conference

The International Conference on Recent Advancements in Computing, IoT and Computer Engineering Technology (CICET) is a communication platform of researchers and practitioners both from academia and industry in the areas of Computing, Internet of Things (IoT), Integrated Circuits and Systems and Computer Engineering Technology. The main target of CICET 2019 is to bring together software/hardware engineering researchers, computer scientists, practitioners and people from industry and business to exchange theories, ideas, techniques and experiences related to all aspects of CICET. Finally, CICET 2019 will take place in The Tamkang University, Taipei, Taiwan, and October 21-23, 2019.

Recent progress in Deep Learning has unleashed some of the promises of Artificial Intelligence (AI), moving it from the realm of toy applications to a powerful tool that can be leveraged across a wide number of industries. In recognition of this, CICET 2019 has selected Artificial Intelligence and Machine Learning as this year's central theme. We invite submissions across a wide range of topics in this area, including traditional machine learning and AI, deep learning, computer vision, robotics, and applications of these algorithms in any areas, as well as papers in other selected areas.

CICET 2019 Conference Program – Day 1 (October 21)

9.30 Registration

10:00 Opening remark (Prof. Chien-Chang Chen, Chairman of Department of Computer Science and Information Engineering, Tamkang University, Taiwan)

10:15 Keynote Speech I (Chair: Dr. Woonkian Chong, SP Jain School of Global Management, Singapore)

Speaker: *Prof. Steven Guan*, Director of the Research Institute of Big Data Analytics (RIBDA), Xi'an Jiaotong-Liverpool University, China

Title: Incremental Hyperplane Partitioning Approach for Classification

Abstract: An incremental hyperplane partitioning approach is proposed for classification. Hyperplanes that are close to the classification boundaries of a given problem are searched using an incremental approach based upon Genetic Algorithm (GA). A new method - Incremental Linear Encoding based Genetic Algorithm (ILEGA) is proposed for that purpose. We solve classification problems through a simple and flexible chromosome encoding scheme, where the partitioning rules are encoded by linear equations rather than If-Then rules. The algorithm is tested with six datasets. The experimental results show that ILEGA outperform in both lower- and higher-dimensional problems compared with the original GA. A variation of the incremental hyperplane partitioning approach is also presented, namely incremental hypersphere partitioning.

Biography: Steven Guan received his BSc. from Tsinghua University (1979) and M.Sc. (1987) & PhD (1989) from the University of North Carolina at Chapel Hill. He is currently a Professor and the Director for Research Institute of Big Data Analytics at Xi'an Jiaotong-Liverpool University (XJTLU). He served as the head of department position at XJTLU for 4.5 years, creating the department from scratch and now in shape. Before joining XJTLU, he was a tenured professor and chair in intelligent systems at Brunel University, UK. Prof. Guan has worked in a prestigious R&D organization for several years, serving as a design engineer, project leader, and department manager. After leaving the industry, he joined the academia for three and half years. He served as deputy director for the Computing Center and the chairman for the Department of Information & Communication Technology. Later he joined the Electrical & Computer Engineering Department at National University of Singapore as an associate professor for eight years. Prof. Guan's research interests include: machine learning, computational intelligence, big data analytics, mobile commerce, modeling, networking, personalization, security, and pseudorandom number generation. He has published extensively in these areas, with 130+ journal papers and 180+ book chapters or conference papers. He has chaired, delivered keynote speeches for 80+ international conferences and served in 180+ international conference committees and 20+ editorial boards. There are quite a few inventions from Prof. Guan including Generalized Minimum Distance Decoding for Majority Logic Decodable Codes, Prioritized Petri Nets, Self-Modifiable Color Petri Nets, Dynamic Petri Net Model for Iterative and Interactive Distributed Multimedia Presentation, Incremental Feature Learning, Ordered Incremental Input/Output Feature Learning, Input/Output Space Partitioning for Machine Learning, Recursive Supervised Learning, Reduced Pattern Training using Pattern Distributor, Contribution Based Feature Selection, Incremental Genetic Algorithms, Incremental MultiObjective Genetic Algorithms, Decremental Multi-objective Optimization, Multi-objective Optimization with Objective Replacement, Incremental Hyperplane Partitioning for Classification, Incremental Hyper-sphere Partitioning for Classification, Controllable Cellular Automata for Pseudorandom Number Generation, Self Programmable Cellular Automata, Configurable Cellular Automata, Layered Cellular Automata, Transformation

Sequencing of Cellular Automata for Pseudorandom Number Generation, Open Communication with Self-Modifying Protocols, etc.

11:00 Coffee break

11:15 Keynote Speech II (Chair: Dr. Woonkian Chong, SP Jain School of Global Management, Singapore)

Speaker: *Prof. Danny Hughes*, Department of Computer Science of KU Leuven, Belgium

Title: Retrofitting Your Assets with the Industrial IoT: Opportunities and Challenges

Abstract: This talk will describe industrial experiences of applying IoT technologies to gather real-time telemetry from a wide range of industrial assets in order to improve product quality, eliminate downtime and reduce waste. This talk will first review key building blocks of this solution, including: plug-and-play sensors, reliable wireless networks and nuts-and-bolts data analytics. The talk will then discuss how core IoT technologies can be combined to solve real business solutions. This presentation will be illustrated throughout with examples of real-world industrial IoT systems that are generating value today for customers in domains as diverse as: ore processing, automotive manufacture and fast moving consumer goods.

Biography: Dr. Danny Hughes is a Professor with the Department of Computer Science of KU Leuven (Belgium), where he is a member of the DistriNet (Distributed Systems and Computer Networks) research group and leads the Networked Embedded Software task-force. He has a PhD from Lancaster University (UK) and has previously worked at the University of California at Berkeley (USA), the University of Sao Paulo (Brazil) and Xi'an Jiaotong-Liverpool University (China).

12:00 Lunch

13:30 Session 1 (Chair: Dr. Yujia Zhai, Xi'an Jiaotong-Liverpool University, China; Papers #1 – 6)

1. I-Hsuan Peng, Yu-Chun Tai and Pei-Chun Lee, *Design and Implementation of a Shared LoRa Network and Its Application*, Minghsin University of Science and Technology, Taiwan
2. Hernan Alar and Proceso Fernandez, *Using Reinforcement Learning to Improve the Energy Consumption of Nodes in an IoT network*, Ateneo de Manila University, Philippines
3. Huilin Zheng, Kwang Ho Park, Jong Yun Lee and Keun Ho Ryu, *A Majority Voting Ensemble Classifier to Predict Hypertension Based on KNHANES Dataset*, Chungbuk National University, Korea
4. Kannika Boonkasem, Tasanawan Soonklang and Thepchai Supnithi, *Generating Linear Programming Questions*, Silpakorn University, Thailand
5. Seongbin Kim and Sangmin Lee, *A Comparative Evaluation of Speech-Music Classification Algorithms in the Noise Environment*, Inha University, Korea
6. Fan Yang, Hao Wong and Danny Hughes, *Towards 40 Year Battery Life for the Internet of Things: A Research Road-map*, KU Leuven, Belgium

15:30 Coffee break

16:00 Session 2 (Chair: Dr. Fan Yang, KU Leuven, Belgium; Papers #7 – 12)

7. Yujia Zhai, Kejun Qian and Sanghyuk Lee, *Predictive Control on Compliantly-Coupling Systems*, Xi'an Jiaotong-Liverpool University, China

8. Irwyn Sadien, Konstantinos Papangelis, Charles Fleming and Hai-Ning Liang, *Lessons Learned from Developing a Microservice Based Mobile Location-Based Crowdsourcing Platform*, Xi'an Jiaotong-Liverpool University, China

9. Danny Hughes and Fan Yang, *Towards Middleware for Edge Analytics in the Industrial IoT*, KU Leuven, Belgium

10. Yu-Ren Lin and Chien-Chang Chen, *House Price Prediction in Taipei by Machine Learning Models*, Tamkang University, Taiwan

11. Dongkun Hou, Jieming Ma and Liwei Yin, *A Framework of Online Judge Systems for Assessing Programming Skills*, Xi'an Jiaotong-Liverpool University, China

12. Seonwoo Lee, Seonwoo Kwon and Jangwoo Kwon, *The method of generating license plate data in a fixed camera environment by multiple histogram comparison and Grid Search*, Inha University, Korea

18:00 Award ceremony

19:00 Conference banquet - 1010 湘 restaurant (9F., 8 Zhongshan Rd., – close to the Tamsui MTR Station)

CICET 2019 Conference Program – Day 2 (October 22)

9:30 Registration

10:00 Session 3 (Chair: Prof. Ka Lok Man, Xi'an Jiaotong-Liverpool University, China; Papers #13 – 21)

13. Justina Mandravickaite and Tomas Krilavicius, *Document Classification to Functional Styles (Domains of Use): Lithuanian Case*, Baltic Institute of Advanced Technology, Lithuania

14. Dovile Kuiziniene and Tomas Krilavicius, *Deep Learning for Credit Scoring*, Vytautas Magnus University, Lithuania

15. Shiyun Wu, Junli Li, Ting Wang and Zhonghui Chen, *Quality Evaluation System of Online Courses Based on Review Data*, Shanghai International Studies University, China

16. Zhuqing Liu and Ting Wang, *Popularity Prediction of WeChat Official Accounts Articles based on Deep Learning*, Shanghai International Studies University, China

17. Yuanmeng Bi, Ting Wang and Zhuqing Liu, *Global Influence Analysis of Wuxi World Internet of Things Exposition*, Shanghai International Studies University, China

18. Xinyu Liu and Ting Wang, *Comparative Sentiment Analysis of Chinese and English Multi-source Web Information of Gene Editing Baby Event*, Shanghai International Studies University, China

19. Siyan Deng, Ting Wang and Xinyu Liu, *Film Box Office Prediction based on Multiple Linear Regression Model*, Shanghai International Studies University, China

20. Ziqiang Bi and Jieming Ma, *Predicting the Global Maximum Power Point of Photovoltaic Systems under Partial Shading Conditions using Gaussian Process Regression*, Xi'an Jiaotong-Liverpool University, China

21. Woon Kian Chong and Hai-Ning Liang, *Key Factors and the User Experiences of Mobile Recommendation Systems: Mediating Effects of User*, SP Jain School of Global Management, Singapore

15:00 Excursion to the Chiang Kai-shek Memorial and Farewell reception

CICET 2019 Conference Program – Day 3 (October 23)

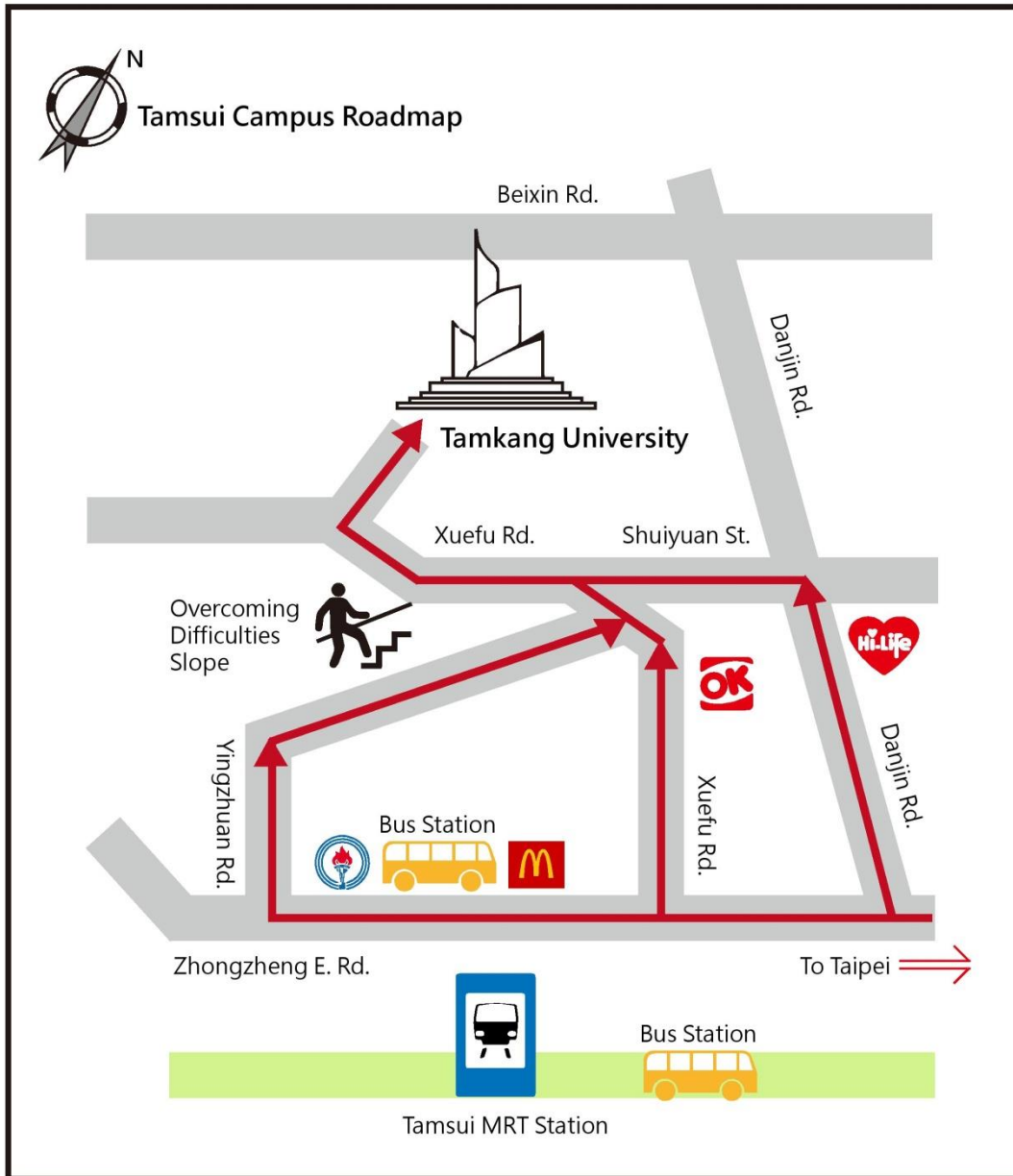
10:00 Steering committee meeting

11:00 Coffee break

11:30 CICET 2020 organizing committee meeting

12:30 CICET 2019 close

Tamkang University Roadmap



Tamsui Campus address: No.151, Yingzhuang Rd., Tamsui Dist.,
New Taipei City 25137, Taiwan (R.O.C.)
Tel. : +886-2-26215656

Tamsui Campus Map

1	蔣聲銅像廣場	Statue of Mr. Chang Ching-sheng	12	會文館(F)	Hwei-wen Hall (F)	22	文錕音樂廳	Carrie Chang Music Hall
2	大門管制站	Main Entrance Guard House	13	商管大樓(B)	Business and Management Building (B)	23	學人宿舍	Faculty Residences
3	紹猷紀念游泳館(N)	Shao-mo Memorial Natatorium Complex (N)	14	海事博物館(M)	Maritime Museum (M)	24	覺生紀念圖書館(U)	Chueh-sheng Memorial Library (U)
4	羅先紀念科學館(S)	Liu-hsien Memorial Science Hall (S)	15	工學館(G)	Engineering Building (G)	25	覺生綜合大樓(I)	Chueh-sheng Memorial Hall (I)
5	鍾靈化學館(C)	Chung-ling Chemistry Hall (C)	16	工學大樓(E)	Main Engineering Building (E)	25	覺生國際會議廳(10樓)	Chueh-sheng International Conference Hall (10th Fl.)
6	圖書館鍾靈分館	Chung-ling Library	17	教育學院(ED)	College of Education (ED)	26	學生活動中心(R)	Student Activity Center (R)
7	傳播館(O)	Communication Hall (O)	18	松濤館(Z)	Sung-tao Hall (Z)	27	教職員停車場	Faculty Parking Lot
8	傳播館(O)	Communication Hall (O)	19	文錕藝術中心	Carrie Chang Fine Arts Center	28	視聽教育館(V)	Audio-visual Education Building (V)
9	紹猷紀念體育館(SG)	Shao-mo Memorial Gymnasium (SG)	20	外國語文大樓(FL)	College of Foreign Languages and Literatures (FL)	29	行政大樓(A)	Administration Building (A)
10	羅澤國際學舍(J)	Reitaku International House (J)	21	蔣聲紀念大樓(T)	Ching-sheng Memorial Hall (T)	30	宮燈教室(H)	Chinese Palace-style Classrooms (H)
11	文學館(L)	College of Liberal Arts (L)	21	蔣聲國際會議廳(3樓)	Ching-sheng International Conference Hall (3rd Fl.)	31	覺軒花園	Chueh-hsuan Chinese Garden
			21	蔣聲國際會議廳(4樓)	Ching-sheng International Conference Hall (4th Fl.)	32	守謙國際會議中心	Hsu Shou-Chlien International Conference Center



The CICET 2019 Conference will be held at Room E680, Main Engineering Building (building number 16), Tamsui Campus, Tamkang University.

Transportation

Tamkang University (TKU)

No.151, Yingzhuan Rd., Tamsui Dist., New Taipei City 25137, Taiwan (R.O.C.)

Taiwan Taoyuan International Airport to the Tamsui Campus of Tamkang University:

(1) By Taxi

Taxi stands are located outside the Arrival Halls of both Terminals 1 and 2. Taxis are available at Taoyuan Airport 24 hours a day. They charge according to the meter and add a 50% surcharge to the metered total (highway tolls not included). A typical taxi fare from Taiwan Taoyuan International Airport to Taipei is approximately NT\$1,100~1,500. It takes about one hour to get to the Tamsui campus. (Recommended if carrying heavy luggage)

(2) By Taoyuan Airport Mass Rapid Transit (MRT)

First, take a subway/MRT from the Airport Terminal 2 station (A13)/Airport Terminal 1 station (A12) to the Taipei Main station (A1). Then, change to the Red Line MRT (Xinyi Line) and leave at the Tamsui station which is the final stop on the red line.

From there, take the R27 bus to the Tamsui Campus. The bus ride should take approximately 10 minutes. Alternatively, you may want to catch a taxi. The taxi ride should take about 5 minutes (approx. NT\$120 per trip).

Taiwan Taoyuan International Airport: (<http://www.taoyuan-airport.com>)

Mass Rapid Transit (MRT): (<http://english.trtc.com.tw>)

Accommodation

1. Hotel Regalees (4 Stars), No. 89, Xue-Fu Road, Tamsui District, New Taipei City 251, Taiwan (R.O.C), 25142. (<http://www.regalees-hotel.com.tw/en>)
2. Happiness Danhsui (3 Stars), No. 151, Section 1, Shuiyuan Street, Tamsui District, Taipei, Taiwan, 25146. (<http://justad.info/1095337-Happiness-danhsui>)

Conference banquet - 1010 湘 restaurant (<http://www.1010restaurant.com>)

View:



Address:

■ 淡水店 Danshui Store MAP

地址: 新北市淡水區中山路8號9樓【9F., 8 Zhongshan Rd., Tamsui Dist., New Taipei City】

電話: (02)2629-0056 / 網路電話: 070-1012-8590

位於淡水捷運站旁以景觀優美著稱, 配合店內長長一整排透明玻璃窗, 每當夕陽西下, 觀音山、淡水河、藍天白雲與夕陽餘暉交會無比美景。

營業時間: 一~四 11:00~14:30 / 17:00~21:30

五 11:00~14:30 / 17:00~22:00

六 11:00~22:00

日 11:00~21:30

捷運: 淡水信義線【淡水站】1號出口

公車站名: 捷運淡水站

(可連結至 [大都會廣場](#) 網站查詢)

Map:

