



The 5th NAFOSTED Conference on Information and Computer Science
Ton Duc Thang University (Nov 23-24, 2018)

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NICS'18

2018 5th NAFOSTED Conference on Information and Computer Science (NICS) Program



tz=Asia/Saigon

Time	Room A403	Room A101	Meeting Room C	Meeting Room B
Friday, November 23				
07:30-08:30	Registration			
08:30-09:00	Opening Ceremony			
09:00-10:00	Keynote Speech #1: Preparing the University for Rapid Digital Evolution			
10:00-10:30	Coffee Break			
10:30-12:10	Invited Speech	CN1: Communications and Networking	CS1: Foundations of Computer Science	ML1: Modern Linguistics
10:50-12:10	CI1: Computational Intelligence			
12:10-13:30	Lunch			
13:30-14:30	Keynote Speech #2: Artificial Intelligence and Law			
14:40-15:40	CI2: Computational Intelligence	CN2: Communications and Networking	SE1: Software Engineering	ML2: Modern Linguistics
15:40-16:10	Coffee Break			
16:10-17:30	CI3: Computational Intelligence	CN3: Communications and Networking	CV1: Computer Vision and Intelligent Systems	ML3: Modern Linguistics
18:30-20:30	Banquet			
Saturday, November 24				
07:30-08:00	Registration			
08:00-09:40	CI4: Computational Intelligence	CV2: Computer Vision and Intelligent Systems		CN4: Communications and Networking
08:40-09:40				ML4: Modern Linguistics
09:40-10:10	Poster Presentation Session			
10:10-10:30	Coffee Break			
10:30-11:15	Industry Session: Invited Talk #1			
11:15-12:00	Industry Session: Invited Talk #2			
12:00-13:30	Lunch			
13:30-14:50		CV3: Computer Vision and Intelligent Systems	CI5: Computational Intelligence	
14:50-15:10	Coffee Break			
15:10-16:10		CV4: Computer Vision and Intelligent Systems	CI6: Computational Intelligence	

Friday, November 23

Friday, November 23 7:30 - 8:30

Registration

Lounge of Hall A

Friday, November 23 8:30 - 9:00

Opening Ceremony

Hall A

Friday, November 23 9:00 - 10:00

Keynote Speech #1: Preparing the University for Rapid Digital Evolution

Room: Hall A

Prof. Ishwar Puri

Chair: Tu Bao Ho (Japan Advanced Institute of Science and Technology, Japan)

New disruptions - technological, business and social - are being facilitated by the evolution of digital technologies. There are, of course, many valuable pilot efforts across the world that integrate a deep understanding of new research on digital technologies with student learning. Yet the classical classroom that does not fully include digital learning dominates globally. There are many curricula that allow postsecondary students to learn about digital opportunities, but these are not ubiquitous and neither are they based on current advances. As educators, we want students to learn and become more self-aware about how their academic disciplines intersect with the enlarging digital world and new research. How do we do so? First, we must convey that digital transformation and innovation are not synonymous. While digital transformations are typically realized over longer periods, digital innovations on the other hand are generated by the more immediate ignition of creativity and relatively shorter term design thinking. Digital creativity is enabled both within the classroom and outside it, in the latter case sometimes even without a formal curriculum. It thus follows that, in addition to discipline-specific fundamentals, students and researchers should learn to embrace digital evolution regardless of their area of academic discipline to enable longer term digital transformation.

In this presentation, we will discuss some examples of how the awareness and understanding of digital evolution has been integrated into student learning and research in various engineering disciplines. This includes, for instance, teaching and learning related to new research in autonomous systems, data analytics, IoT implementations, e.g., for advanced manufacturing, and the evolution of graphical user interfaces and apps. Finally, we present some strategies to encourage the more ubiquitous implementation of these integrations.

Friday, November 23 10:00 - 10:30

Coffee Break

Friday, November 23 10:30 - 10:50

Invited Speech

How IEEE contributes to scientific activities

Prof. Kukjin Chun

Room A403

Chair: Huynh Thi Thanh Binh (HUST, Vietnam)

Friday, November 23 10:30 - 12:10

CN1: Communications and Networking

Room A101

Chair: Khuong Ho Van (HoChiMinh City University of Technology, Vietnam)

10:30 [Closed-form Analysis of a Decode-and-Forward Scheme under Physical Layer Security over General Fading Channels](#)
[Ngoc Son Pham](#) (Ho Chi Minh City University of Technology and Education, Vietnam); [Van Phu Tuan](#), [Sol Park](#) and [Hyung-Yun Kong](#) (University of Ulsan, Korea)

10:50 [Time-Frequency Distribution for Undersampled Non-stationary Signals using Chirp-based Kernel](#)

[Yen Thi Hong Nguyen](#) (The University of Danang & University of Science and Technology, Vietnam); [Desmond McLernon](#) (The University of Leeds, United Kingdom (Great Britain)); [Mounir Ghogho](#) (International University of Rabat, Morocco & University of Leeds, United Kingdom (Great Britain)); [Syed Ali Raza Zaidi](#) (University of Leeds, United Kingdom (Great Britain))

11:10 [A New Protocol based on Optimal Capacity for Energy Harvesting Amplify-and-Forward Relaying Networks](#)

[Hung Ha Duy](#) (Faculty of Electrical and Electronics Engineering, Ton Duc Thang University, HCMC, Vietnam); [Dac-Binh Ha](#) (Faculty of Electrical and Electronics Engineering, Duy Tan University, Da Nang, Vietnam); [Jaroslav Zdralek](#) and [Miroslav Voznak](#) (Faculty of Electrical Engineering and Computer Science, VSB - Technical University of Ostrava, Ostrava, Czechia)

11:30 [Stable low-stretch routing scheme for wireless sensor networks with a large hole of complicated shape](#)

[Nhan Q.D. Thai](#) and [Khanh-Van Nguyen](#) (Hanoi University of Science and Technology, Vietnam)

11:50 [Reconfigurable Mode Converter Using Two Silicon Y-Junction Couplers for Mode Division Multiplexing Network](#)

[Ho Duc Tam Linh](#) (Danang University of Science and Technology & Hue University of Sciences, Vietnam); [Duong Duy](#) (Posts and Telecommunications Institute of Technology, Vietnam); [Cao Dung Truong](#) (Posts and Telecommunications Institute of Technology & Faculty of Electronics Engineering, Vietnam); [Hung Nguyen](#) (The University of Danang, Vietnam)

CS1: Foundations of Computer Science 

Meeting Room C

Chair: [Phuong Le-Hong](#) (Vietnam National University, Hanoi & FPT Technology Research Institute, FPT Corporation, Vietnam)

10:30 [Drug Repositioning by Bipartite Local Models](#)

[Phuong H. Nguyen](#) and [Duc-Hau Le](#) (Thuyloi University, Vietnam)

10:50 [Hardware Trojan Threat and Its Countermeasures](#)

[Xuan-Thuy Ngo](#) (Secure-IC S.A.S, France); [Van-Phuc Hoang](#) and [Han Le Duc](#) (Le Quy Don Technical University, Vietnam)

11:10 [Linear time algorithm for maximum distance- \$k\$ matching in interval graphs](#)

[Viet Hung Tran](#), [Nguyen Duc Nghia](#) and [Phan Thuan Do](#) (Hanoi University of Science and Technology, Vietnam)

11:30 [User's perception on mental health applications: a qualitative analysis of user reviews](#)

[Kong Saoane Thach](#) (Tra Vinh University, Vietnam)

11:50 [Adding External Features to Convolutional Neural Network for Aspect-based Sentiment Analysis](#)

[Nguyen Thi Xuan Huong](#) (HaiPhong Private University, Vietnam); [Vo Cong Hieu](#) and [Le Anh Cuong](#) (Ton Duc Thang University, Vietnam)

ML1: Modern Linguistics 

Meeting Room B

Chair: [Tue Trinh](#) (University of Wisconsin-Milwaukee, USA)

10:30 [Response particles: The mysteries of yes and no](#)

[Manfred Krifka](#) (Leibniz-Zentrum Allgemeine Sprachwissenschaft, Germany)

11:03 [Polarity and the diachronic development of deontic modality in Chinese](#)

[Barbara Meisterernst](#) (National Tsing Hua University, Taiwan)

11:36 [Towards a Compositional Semantics for \$L+H*LH\%\$](#)

[Marie-Christine Meyer](#) (ZAS, Germany)

Friday, November 23 10:50 - 12:10**CI1: Computational Intelligence** 

Room A403

Chair: [Quan Thanh Tho](#) (HCMUT, Vietnam)

10:50 [Deep Learning versus Traditional Classifiers on Vietnamese Students' Feedback Corpus](#)

[Phu Nguyen](#), [Tham Truong](#), [Kiet Van Nguyen](#) and [Ngan L.T. Nguyen](#) (University of Information Technology, VNU-HCM, Vietnam)

11:10 [A Coevolutionary approach for classification problems: Preliminary results](#)

[Van Truong Vu](#) (Le Quy Don Technical University, Vietnam); [Bui Lam](#) (Le Quy Don University, Vietnam); [Trung Nguyen](#) (Liverpool John Moores University, United Kingdom (Great Britain))

11:30 [Two new concepts "Picture Fuzzy Rough Soft Sets" and "Picture Fuzzy Dynamic Systems" in Picture Fuzzy Systems](#)

[Bui Cuong](#) (Institute of Mathematics, Hanoi, Vietnam); [Pham Thong](#) (VNU University of Science & Vietnam National University Hanoi, Vietnam)

11:50 [Text Generation from Abstract Semantic Representation for Summarizing Vietnamese Paragraphs Having Co-references](#)

[Trung Tran](#) (University of Information Technology, VNU - HCMC, Vietnam); [Dang Tuan Nguyen](#) (University of Information Technology, VNU-HCM, Vietnam)

Friday, November 23 12:10 - 13:30

Lunch  TOP

Friday, November 23 13:30 - 14:30**Keynote Speech #2: Artificial Intelligence and Law**  TOP

Room: A403

Prof. Ashwin Ittoo

Chair: Bui Lam (Le Quy Don University, Vietnam)

The topic of my talk is one that has only recently started to attract the interest of scientists and regulatory and governmental authorities, namely, that of Artificial Intelligence (AI) and Law. In particular, I will focus on two sub-domains of the law, which have been/will be most impacted by the emergence of increasingly sophisticated AI technologies.

The first sub-domain is that of competition law. I will describe a recent project in which we are investigating whether pricing agents, based on deep reinforcement learning can participate in tacit collusion, i.e. whether they can form cartels, just as humans would do. I will present various game-theoretic settings, which enable us to study the phenomenon of algorithmic tacit collusion.

The second domain is that of anti-discrimination law. In certain states of the US, algorithms are being deployed to predict the recidivism risk of defendants. These algorithms are trained to make predictions based on past data. However, studies by human-rights groups have shown that these data are inherently biased - they contain more instances of certain race/profile. Consequently, algorithms trained on these data, also suffer from the bias effect. The question here is how to remove bias during training?

Friday, November 23 14:40 - 15:40**CI2: Computational Intelligence**  TOP

Room A403

Chair: Minh Le Nguyen (Japan Advanced Institute of Science and Technology, Japan)

14:40 [Relation Extraction in Vietnamese Text via Piecewise Convolution Neural Network with Word-Level Attention](#)

[Nhat Nguyen](#), [Thanh Ha Nguyen](#) and [Hieu Vo](#) (University of Engineering and Technology, VNU, Vietnam); [Nguyen Le Minh](#) (Jaist, Vietnam)

15:00 [Deep Learning for Aspect Detection on Vietnamese Reviews](#)

[Dang Van Thin](#), [Vu Duc Nguyen](#), [Kiet Van Nguyen](#) and [Ngan L.T. Nguyen](#) (University of Information Technology, VNU-HCM, Vietnam)

15:20 [A Hybrid Feature Selection Approach for Applying to Patients with Diabetes Mellitus: KNHANES 2013-2015](#)

[Huilin Zheng](#), [Hyun Woo Park](#), [Dingkun Li](#) and [Kwang Ho Park](#) (Chungbuk National University, Korea); [Keunho Ryu](#) (Chungbuk University, Korea)

CN2: Communications and Networking  TOP

Room A101

Chair: Khuong Ho Van (HoChiMinh City University of Technology, Vietnam)

14:40 [Repeated Index Modulation with Coordinate Interleaved OFDM](#)

[Le Huyen](#) (Le Quy Don Technical University, Vietnam); [Vu-Duc Ngo](#) (Hanoi University of Science and Technology, Vietnam); [Minh-Tuan Le](#) (MobiFone R&D Center, MobiFone Corporation, Vietnam); [Nam Xuan Tran](#) (Le Quy Don Technical University, Vietnam)

15:00 [Implementation of IDMA System with Multiple Access Channel and non-Gaussian Noise](#)

[Bao Quoc Vuong](#) (International University, VNUHCM, Vietnam); [Hung Ngoc Do](#) (International University, Vietnam)

15:20 [Performance Comparison of Indoor Positioning Schemes Exploiting Wi-Fi APs and BLE Beacons](#)

[Younguk Yun](#), [Jeongpyo Lee](#) and [Dukhyun Ann](#) (Kwangwoon University, Korea); [Sangsoo Kim](#) (Hoseo Telnet, Korea); [Youngok Kim](#) (Kwangwoon University, Korea)

ML2: Modern Linguistics

Meeting Room B

Chair: Nigel Duffield (Konan University, Japan)

14:40 [Some observations on Vietnamese demonstratives](#)

[Phan Thi Huyen Trang](#) (Vietnam National University, Vietnam); [Dylan Tsai](#) (National Tsing Hua University, Taiwan)

15:10 [The Asymmetry of Topicalization: a View from Mandarin Chinese](#)

[Wei-wen Roger Liao](#) (Academia Sinica, Taiwan)

SE1: Software Engineering

Meeting Room C

Chair: Quan Thanh Tho (HCMUT, Vietnam)

14:40 [Modelling Dynamic Information Flows: Extensions of LINQ with Norms](#)

[Nguyen Hoang Thuan](#) (Can Tho University of Technology, Vietnam); [Tran Anh Tri](#) (Can Tho University, Vietnam); [David Swann](#) (LINQ Ltd, Vietnam); [Huu-Hoa Nguyen](#) (Can Tho University, Vietnam)

15:00 [Electroencephalography Analysis Using Neural Network](#)

[Ngan Vuong Thuy Nguyen](#) and [Tuan Van Huynh](#) (University of Science, VNU-HCM, Vietnam); [Hanh Thi Hong Nguyen](#) (VNU-University of Science Ho Chi Minh city, Vietnam)

15:20 [The Influence of Icon Background Colors and Icon Symbols on Menu Item Selection for Smartphone](#)

[Lumpapun Panchoojit](#) and [Nuttanont Hongwarittorn](#) (Thammasat University, Thailand)

Friday, November 23 15:40 - 16:10

Coffee Break

Friday, November 23 16:10 - 17:30

CI3: Computational Intelligence

Room A403

Chair: Lam Thu Bui (Le Quy Don Technical University, Vietnam)

16:10 [An Efficient Parallel Algorithm for Mining Both Frequent Closed and Generator Sequences on Multi-core Processors](#)

[Hai Duong](#) and [Tin Truong](#) (University of Dalat, Vietnam); [Bac Le](#) (University of Science. VNU HCM, Vietnam)

16:30 [Building mathematical models applied to UTXOs selection for objective transactions](#)

[Nguyen Huy](#) (University of Technology, Vietnam); [Hong-Son Trang](#) (Hoa Sen University, Vietnam); [Thinh Nguyen](#) (Ho Chi Minh City University of Technology, Vietnam); [Nguyen Huynh Tuong](#) (Faculty of Computer Science & Engineering, Ho Chi Minh city University of Technology, Vietnam); [Thanh Van Le](#) (Ho Chi Minh City University of Technology, Vietnam)

16:50 [An Ensemble of Shallow and Deep Learning Algorithms for Vietnamese Sentiment Analysis](#)

[Nguyen Quan](#) and [Uy Nguyen](#) (Le Quy Don Technical University, Vietnam)

17:10 [On Temporal Cluster Analysis for Early Identifying In-trouble Students in an Academic Credit System](#)

[Chau Le](#), [Chau Thi Ngoc Vo](#) and [Phung Hua Nguyen](#) (Ho Chi Minh City University of Technology, Vietnam)

CN3: Communications and Networking

Room A101

Chair: Xuan-Tu Tran (VNU University of Technology and Engineering, Vietnam)

16:10 [***A role-based statistical mechanism for DDoS attack detection in SDN***](#)

[Phan The Duy](#) and [Do Thi Thu Hien](#) (University of Information Technology, VNU-HCM, Vietnam); [Van-Hau Pham](#) (University of Information Technology, Vietnam)

16:30 [***Hardware Implementation of a MIMO Channel Emulator for high speed WLAN 802.11ac***](#)

[Van Tien Tran](#) and [Manh Tien Tran](#) (University of Information Technology, Vietnam); [Duc Khai Lam](#) (University of Information Technology, VNU-HCM, Vietnam)

16:50 [***Enhanced Spread Spectrum OFDM-IM with Rotated Zadoff-Chu Sequences***](#)

[Thien Van Luong](#) and [Youngwook Ko](#) (Queen's University Belfast, United Kingdom (Great Britain)); [Vu-Duc Ngo](#) (Hanoi University of Science and Technology, Vietnam); [Minh-Tuan Le](#) (MobiFone R&D Center, MobiFone Corporation, Vietnam); [Le Huyen](#) and [Nam Xuan Tran](#) (Le Quy Don Technical University, Vietnam)

17:10 [***Nonnegative Tensor Decomposition for EEG Epileptic Spike Detection***](#)

[Nguyen Thi Anh Dao](#) (University of Technology and Logistics, Vietnam); [Le Trung Thanh](#) and [Nguyen Linh-Trung](#) (Vietnam National University, Hanoi, Vietnam); [Vu Ha Le](#) (UET, Vietnam)

CV1: Computer Vision and Intelligent Systems

Meeting Room C

Chairs: Hoang Van Dung (Quang Binh University, Vietnam), The-Anh Pham (Hong Duc University, Vietnam)

16:10 [***Occluded Image Recognition with Extended Nonnegative Matrix Factorization***](#)

[Viet-Hang Duong](#) (BacLieu University, Vietnam); [Manh-Quan Bui](#) and [Jia-Ching Wang](#) (National Central University, Taiwan)

16:30 [***Region-based deformation transfer***](#)

[Phong Khac Do](#) (Vietnam National University, Hanoi, Vietnam); [Thi-Chau Ma](#) (VNU University of Engineering and Technology, Vietnam); [Giang Cao](#) and [An Thi Thu Nguyen](#) (Can Tho University, Vietnam)

16:50 [***Planar Object Recognition For Bin Picking Application***](#)

[Le Duc Hanh](#) (Ho Chi Minh city University of Technology, Vietnam); [Le Minh Duc](#) (Ho Chi Minh City University of Technology, Vietnam)

17:10 [***A Frame-work assisting the Visually Impaired People: Common Object Detection and Pose Estimation in Surrounding Environment***](#)

[Le Hung](#) (International Research Institute MICA - HaNoi University Science and Technology, Vietnam); [Hai Vu](#) (International Research Institute MICA, Hanoi University of Science and Technology, Vietnam); [Nguyen T. Thuy](#) (Vietnam National University of Agriculture, Vietnam)

ML3: Modern Linguistics

Meeting Room B

Chair: Phan Thi Huyen Trang (Vietnam National University, Vietnam)

16:10 [***Bilingualism and the Lifespan: Young Adult Heritage Speakers of Spanish***](#)

[Sandra Pucci](#) (University of Wisconsin, Milwaukee, USA)

16:36 [***Onset consonant clusters in Phu Quy dialect***](#)

[Dung Hoang](#) (University of Education, Ho Chi Minh City, Vietnam); [Mai Le Nguyen Hoang](#) (University of Education, Vietnam)

17:02 [***Assessing the Readability of Literary Texts in Vietnamese Textbooks***](#)

[An-Vinh Luong](#) (HoChiMinh city University of Science, Vietnam); [Diep Nguyen](#) (SaiGon Technology University, Vietnam); [Dinh Dien](#) (University of Natural Sciences, Vietnam)

Friday, November 23 18:30 - 20:30

Saturday, November 24

Saturday, November 24 7:30 - 8:00

Registration 

Saturday, November 24 8:00 - 9:40

CI4: Computational Intelligence 

Room A403

Chair: Minh Le Nguyen (Japan Advanced Institute of Science and Technology, Japan)

- 8:00 [An Efficient Hardware Implementation of Artificial Neural Network based on Stochastic Computing](#)**
[Duy-Anh Nguyen](#) and [Huy-Hung Ho](#) (VNU University of Engineering and Technology, Vietnam); [Duy-Hieu Bui](#) (VNU University of Engineering and Technology (VNU-UET), Vietnam); [Xuan-Tu Tran](#) (VNU University of Technology and Engineering, Vietnam)
- 8:20 [Integrating Grammatical Features into CNN Model for Emotion Classification](#)**
[Thi-Thanh-Thuy Huynh](#) and [Le Anh Cuong](#) (Ton Duc Thang University, Vietnam)
- 8:40 [An Effective Similarity Measure for Neighborhood-based Collaborative Filtering](#)**
[Tan Nghia Duong](#), [Viet Duc Than](#), [Trong Hiep Tran](#) and [Quang Hieu Dang](#) (Hanoi University of Science and Technology, Vietnam); [Nguyen D. Minh](#) (HUST, Vietnam); [Pham Hung Manh](#) (VNPT Technology, Vietnam)
- 9:00 [Speech perception based on mapping speech to image by using convolution neural network](#)**
[Nguyen Quang Trung](#) (Human Machine Interaction Laboratory, University of Engineering & Technology, VNU Ha Noi, Vietnam); [The Duy Bui](#) (Human Machine Interaction Laboratory, Vietnam)
- 9:20 [Collecting Chinese-Vietnamese Texts From Bilingual Websites](#)**
[Minh Trinh](#) (Ton Duc Thang University, Vietnam); [Phuoc Tran](#) (Faculty of IT, TDTU & NLP-KD, Vietnam); [Nhungs Tran](#) (Ton Duc Thang University, Vietnam)

Saturday, November 24 8:00 - 8:40

CN4: Communications and Networking 

Meeting Room B

Chair: Tu Truong (Ton Duc Thang University, Vietnam)

- 8:00 [Energy-Efficient and Low Complexity Channel Coding for Wireless Body Area Networks](#)**
[Hieu T. Nguyen](#) (University in Southeast Norway, Norway); [Thuy V. Nguyen](#) (Posts and Telecommunications Institute of Technology, Vietnam)
- 8:20 [Fully Digital Background Calibration Technique for Channel Mismatches in TIADCs](#)**
[Van-Thanh Ta](#), [Yen Hoang Thi](#), [Han Le Duc](#) and [Van-Phuc Hoang](#) (Le Quy Don Technical University, Vietnam)

Saturday, November 24 8:00 - 9:40

CV2: Computer Vision and Intelligent Systems 

Room A101

Chair: Van Dung Hoang (Quang Binh University, Vietnam)

- 8:00 [Machine Learning Based-distributed Optimal Control Algorithm for Multiple Nonlinear Agents with Input Constraints](#)**
[Luy Tan Nguyen](#), [Dang Nguyen](#), [Minh Dang](#) and [Vinh Tran](#) (Industrial University of Ho Chi Minh City, Vietnam)
- 8:20 [An Intelligent Support System for the knowledge evaluation in high-school mathematics by multiple choices testing](#)**

[Thanh Mai](#) (Ho Chi Minh city Open University, Vietnam); [Hien Nguyen](#) (University of Information Technology, Vietnam); [Trung Le](#) (Vinh Long College of Economics and Finance, Vinh Long, Vietnam); [Vuong Pham](#) (University of Information Technology, VNU-HCM, Vietnam)

8:40 [A new ensemble approach for hyper-spectral image segmentation](#)

[Le Cam Binh](#) (Academy of Military Science and Technology, Vietnam); [Pham Van Nha](#) (Academy of Military Science and Technology & Le Quy Don University, Vietnam); [Long Thanh Ngo](#) and [Pham The Long](#) (Le Quy Don University, Vietnam)

9:00 [Preliminary Result of 3D City Modelling For Hanoi, Vietnam](#)

[Anh Phan](#) (VNU University of Engineering and Technology, Vietnam); [Vu Chu](#) (Center of Multidisciplinary Integrated Technology for Field Monitoring, Vietnam); [Hung Bui](#) and [Thanh Nguyen](#) (VNU University of Engineering and Technology, Vietnam); [Nguyen Viet Ha](#) (VNU Ha Noi, Vietnam)

9:20 [Vision-based Inspection System for Leather Surface Defect Detection and Classification](#)

[Hoang-Quan Bong](#) (Kiengiang Vocational College, Vietnam); [Truong Quoc Bao](#) (CanTho University, Vietnam); [Huu-Cuong Nguyen](#) (Can Tho University, Vietnam); [Minh Triet Nguyen](#) (CanTho University, Vietnam)

Saturday, November 24 8:40 - 9:40

ML4: Modern Linguistics

Meeting Room B

Chair: Dinh Dien (University of Natural Sciences, Vietnam)

8:40 [Linguistic barriers to syllogistic reasoning](#)

[Andreas Haida](#), [Luka Crnič](#) and [Yosef Grodzinsky](#) (The Hebrew University of Jerusalem, Israel)

9:00 [Parsing out in English and Vietnamese](#)

[Nigel Duffield](#) (Konan University, Japan)

9:20 [The Participant-Pronoun Restriction: English and Vietnamese](#)

[Tue Trinh](#) (University of Wisconsin-Milwaukee, USA); [Hubert A Truckenbrodt](#) (Leibniz-Zentrum Allgemeine Sprachwissenschaft, Germany)

Saturday, November 24 9:40 - 10:10

Poster Presentation Session

[Improving Phonetic Recognition with Sequence-length Standardized MFCC Features and Deep Bi-directional LSTM](#)

[Pham Van Toan](#) and [Nguyen Thanh Hau](#) (Framgia Inc, Vietnam); [Minh Thanh Ta](#) (Le Quy Don University, Vietnam)

[Improving the 3D model classification based on selecting proper features](#)

[Nong Thi Hoa](#) (Thai Nguyen University of ICT, Vietnam); [Nguyen Van Tao](#) (University of Information & Communication Technology, Vietnam); [Dinh Thi Thanh Uyen](#) (Thai Nguyen University of Agriculture and Forestry, Vietnam)

[Towards An Educational Music Processor for Folk and Popular Musics](#)

[Anh-Thu G. Phan](#) (Columbia University & Temple University, USA); [Nhan T Ngo](#) (New York University & Temple University, Center for Vietnamese Philosophy, Culture and Society, USA)

[Study on Cloud computing and Emergence of Internet of the Thing in Industry](#)

[Symphorien Yoki Donzia](#) (South Korea, Korea); [Haeng Kon Kim](#) (Daegu Catholic University, Korea); [Bo Yeon Shin](#) (Seoul, Korea)

[FVI: An End-to-end Vietnamese Identification Card Detection and Recognition in Images](#)

[Liem Hoang](#) (FPT Technology Research Institute, FPT University, Vietnam); [Hoang Vu Dang](#) (FPT Technology Research Institute, Vietnam)

[A Practical Solution to the ACM RecSys Challenge 2018](#)

[Tan Nghia Duong](#), [Viet Duc Than](#), [Trong Hiep Tran](#), [Thi Hong Anh Pham](#) and [Van Hoang Anh Nguyen](#) (Hanoi University of Science and Technology, Vietnam); [Hoang Nam Tran](#) (Thanglong High School, Hanoi, Vietnam)

[A Reconfigurable Multi-function DMA Controller for High-Performance Computing Systems](#)

[Hung K. Nguyen](#) (VNU University of Engineering and Technology, Vietnam); [Khoi P. Dong](#) (VNU University of Engineering and Technology, Vietnam); [Xuan-Tu Tran](#) (VNU University of Technology and Engineering, Vietnam)

[A Deep Learning Model for Extracting User Attributes from Conversational Texts](#)

[Pham Quang Nhat Minh](#), [Tuan-Anh Nguyen](#) and [Tuan Duc Nguyen](#) (Alt Vietnam Co., Ltd., Vietnam)

[Building Vietnamese Linguistic Resources for Social Network Text Analysis](#)

[Tuyen Nguyen](#) (FPT Corporation, Vietnam); [Luong Vu](#) (Vietnam Lexicography Center, Vietnam); [Phuong Le-Hong](#) (Vietnam National University, Hanoi & FPT Technology Research Institute, FPT Corporation, Vietnam)

[Lead Engagement by Automated Real Estate Chatbot](#)

[Quan Thanh Tho](#) (HCMUT, Vietnam); [Trung Trinh](#), [Dang Ngo](#) and [Hon Pham](#) (Ho Chi Minh City University of Technology, Vietnam); [Long Hoang](#) and [Hung Hoang](#) (Atomic Vietnam Co., LTD, Vietnam); [Thanh Thai](#) and [Phong Vo](#) (Ho Chi Minh City University of Technology, Vietnam); [Dang Pham](#) (University of Science, Vietnam); [Trung Mai](#) (Bach Khoa University, Vietnam)

Saturday, November 24 10:10 - 10:30

Coffee Break TOP

Saturday, November 24 10:30 - 11:15

Industry Session: Invited Talk #1 TOP

Deep learning for NLG and its application for chatbot system

Associate Prof. Nguyen Le Minh

Room A403

Chairs: Nguyen Thanh Hien (TDT, Vietnam), Bac Le (University of Science. VNU HCM, Vietnam)

In this talk, we focus on showing the state-of-the-art works on natural language generation(NLG) using deep learning approaches. We will highlight existing works on NLG from the leading natural language processing conferences in 2018. We then present the application of NLG in the chatbot systems. The first part of the tutorial will show the background knowledge on deep learning for natural language processing. The second part will discuss NLG techniques from the basic to the state of the art techniques. The third part will show how NLG techniques are used in spoken dialog systems (i.e. Microsoft's Cortana, Apple's Siri, Amazon Alexa, Google Assistant, and Facebook's M) and Chatbot systems. The final part will give a conclusion with our discussion on the challenging of NLG when exploiting for the Vietnamese language.

Saturday, November 24 11:15 - 12:00

Industry Session: Invited Talk #2 TOP

Vietnamese Neural Language Model for NLP Tasks with Limited Resources

Associate Prof. Quan Thanh Tho

Room A403

Chair: Nguyen Le Minh (Jaist, Vietnam)

A statistical language model is a probability distribution over sequences of words. Language modeling is used in various computing tasks such as speech recognition, machine translation, optical character and handwriting recognition and information retrieval and other applications. Whereas n-gram is considered as a traditional language model, neural language model has been emerging recently as a means to approximate the probability of a sentence using neural networks and word embeddings. An advantage of a neural language model is that it can be further applied to other NLP tasks where the training datasets may be limited. In this talk, we realize this idea by introducing the usage of a Vietnamese neural model language trained from a large corpus of social media data. When further applying this neural model language with other NLP tasks including entity recognition, spam detection and topic modeling with relatively small training datasets; we witness improved performance achieved, as compared to other existing approaches using deep learning with typical word embedding techniques.

Saturday, November 24 12:00 - 13:30

Lunch TOP

Saturday, November 24 13:30 - 14:50

CI5: Computational Intelligence TOP

Meeting Room C

Chair: Ashwin Ittoo (University of Liège in Belgium, Belgium)

CI5.1 13:30 [A Comparative Study of Neural Network Models for Sentence Classification](#)

[Phuong Le-Hong](#) (Vietnam National University, Hanoi & FPT Technology Research Institute, FPT Corporation, Vietnam); [Le Anh Cuong](#) (Ton Duc Thang University, Vietnam)

CI5.2 13:50 [A Hybrid Approach to Paraphrase Detection](#)

[Phuc H. Duong](#) and [Nguyen Thanh Hien](#) (Ton Duc Thang University, Vietnam); [Hieu Duong](#) (Ho Chi Minh City University of Technology, Vietnam); [Khoa Ngo](#) and [Dat Ngo](#) (NewAI Research, Vietnam)

CI5.3 14:10 [A review of feature indexing methods for fast approximate nearest neighbor search](#)

[The-Anh Pham](#) (Hong Duc University, Vietnam); [Van-Hao Le](#) (Hong Duc University (HDU) Thanh Hoa, Vietnam); [Dinh-Nghiep Le](#) (Hong Duc University (HDU), Thanh Hoa, Vietnam)

CI5.4 14:30 [Building a Spelling Checker for Documents in Khmer Language](#)

[Trần Văn Nam](#) (Trường Đại học Trà Vinh, Vietnam); [Nguyen Thi Hue](#) (Tra Vinh University, Vietnam); [Huy Khanh Phan](#) (Danang College of Technology, Vietnam)

CV3: Computer Vision and Intelligent Systems 

Room A101

Chair: Huy Pham (Ton Duc Thang University, Vietnam)

13:30 [A solution based on combination of RFID tags and facial recognition for monitoring systems](#)

[Hoang Van Dung](#) and [Van-Dat Dang](#) (Quang Binh University, Vietnam); [Tien-Thanh Nguyen](#) (Science and Technology Department of Quang Binh, Vietnam); [Diem-Phuc Tran](#) (Duy Tan University, Vietnam)

13:50 [An effective implementation of Gaussian of Gaussian descriptor for person re-identification](#)

[Thuy-Binh Nguyen](#) (Hanoi University of Science and Technology, Vietnam); [Duc-Long Tran](#) and [Thi-Lan Le](#) (MICA, HUST, Vietnam); [Pham Thanh Thuy](#) (MICA Institute (HUST - CNRS/UMI 2954 - INP Grenoble), Vietnam); [Huong-Giang Doan](#) (MICA, HUST, Vietnam)

14:10 [Hybrid discriminative models for banknote recognition and anti-counterfeit](#)

[Hoang Van Dung](#) and [Hoang-Thanh Vo](#) (Quang Binh University, Vietnam)

14:30 [Total Variation L1 Fidelity Salt-and-Pepper Denoising with Adaptive Regularization Parameter](#)

[Dang N. H. Thanh](#) (Hue College of Industry, Vietnam); [V. B. Surya Prasath](#) (Cincinnati Children's Hospital Medical Center & University of Cincinnati, USA); [Le Thi Thanh](#) (Ho Chi Minh city University of Transport, Vietnam)

Saturday, November 24 14:50 - 15:10**Coffee Break** **Saturday, November 24 15:10 - 16:10****CI6: Computational Intelligence** 

Meeting Room C

Chair: Le Anh Cuong (Ton Duc Thang University, Vietnam)

15:10 [Semi-supervised method with Spatial weights based Possibilistic fuzzy C-means clustering for Land-cover Classification](#)

[Dinh-Sinh Mai](#) (Le Quy Don Technical University, Vietnam); [Thanh Long Ngo](#) (Le Quy Don University, Vietnam)

15:30 [Vietnamese Keyword Extraction Using Hybrid Deep Learning Methods](#)

[Hung Thanh Bui](#) (Thu Dau Mot University & Data Analytics & Artificial Intelligence Laboratory, Vietnam)

15:50 [Empirical Evaluation of Link Prediction Methods in Social Networks](#)

[Ba-Hien Tran](#) (John von Neumann Institute, Vietnam National University, Ho Chi Minh City, Vietnam)

CV4: Computer Vision and Intelligent Systems 

Room A101

Chair: Hoang Van Dung (Quang Binh University, Vietnam)

15:10 [A Predictive Model for ECG Signals Collected from Specialized IoT Devices using Deep Learning](#)

[Duy Tran](#), [Thanh Vo](#) and [Dung Nguyen](#) (Ho Chi Minh City University of Technology, Vietnam); [Quan Nguyen](#) (Ho Chi Minh City University of Science, Vietnam); [Liem Huynh](#) (GTOPIA Joint Stock Company, Vietnam); [Ly Le](#) (International University, USA); [Hai Do](#) (Ho Chi Minh City International University, Vietnam); [Tho Quan](#) and [Trung Mai](#) (Bach Khoa University, Vietnam)

15:30 [Joint Image Deblurring and Binarization for License Plate Images using Deep Generative Adversarial Networks](#)

[Van-Giang Nguyen](#) and [Duy Long Nguyen](#) (Le Quy Don Technical University, Vietnam)

15:50 [Deep Learning-based Multiple Objects Detection and Tracking System for Socially Aware Mobile Robot Navigation](#)

[Do Nam Thang](#) and [Nguyen Lan Anh](#) (Le Quy Don Technical University, Vietnam); [Trung Dung Pham](#) (Military Technical Academy, Vietnam); [Truong Dang Khoa](#), [Nguyen Huu Son](#) and [Pham Van Nguyen](#) (Le Quy Don Technical University, Vietnam); [Nguyen Hiep](#) (Le Quy Don University, Vietnam); [Vu Duc Truong](#), [Dinh Hong Toan](#) and [Nguyen Manh Hung](#) (Le Quy Don Technical University, Vietnam); [Trung Dung Ngo](#) (University of Prince Edward Island, Canada); [Xuan-Tung Truong](#) (Le Quy Don Technical University, Vietnam)

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