

**The 2016 IEEE RIVF
International Conference on Computing
and Communication Technologies**

Research, Innovation, and Vision for the Future

November 7-9, 2016
Thuyloi University, Hanoi, Vietnam

Organizer

IEEE Vietnam Section

Technical sponsors

IEEE Communications Society

IEEE Computational Intelligence Society



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Preface

RIVF 2016 was the 12th edition in the series since its inception in 2003. The conference was hosted by ThuyLoi University and held from November 07 to 09, 2016. It continued to offer an opportunity for researchers and innovators to discuss problems, share results, identify emerging issues, and establish academic collaborations in various disciplines of computing and communications. The conference was sponsored by the IEEE Vietnam Section, and technically co-sponsored by the IEEE Communications Society and IEEE Computational Intelligence Society.

This IEEE volume contains the papers that were fully accepted for publication in the main proceedings and oral presentation at the conference. RIVF 2016 maintained its high technical quality through the rigorous reviewing process of its international Program Committee. There were 96 papers from 33 countries submitted to the five specialized tracks of the conference and they underwent a rigorous double-blind review process. Each paper was reviewed by three Program Committee members in the first round and meta-reviewed by the respective Track Chairs who also conducted discussion with the reviewers. The Program Chairs then considered the recommendations from the Track Chairs, looked into each paper and its reviews, to make final paper selections. At the end, 43 papers were selected for inclusion in the main proceedings, resulting in the acceptance rate of 44.8%, among which 13 papers were given long presentation and 30 papers given regular presentation in the conference program. Besides, to encourage promising on-going works, 8 papers were accepted for inclusion in the addendum proceedings and short presentation at the conference.

RIVF 2016 would not have been so successful without the efforts, contributions, and supports by many individuals and organizations. We sincerely thank the Honorary Chairs Douglas Zuckerman and Nguyen Quang Kim for their kind advice and support during preparation of the conference. We would like to thank Harvey Freeman, Joshua Huang, and Vu Duong for giving interesting and inspiring keynote talks.

We would also like to thank all the Program Committee members and external reviewers for their hard work to provide timely and comprehensive reviews that were important for evaluation of the submissions. Our special thanks go to the Track Chairs for their careful meta-reviews, discussion with the reviewers, and the recommendations that were crucial to the final paper selection: Hung-Son Nguyen and Quoc-Bao Vo (Computational Intelligence and Big Data Analytics), Hsiao-Hwa Chen and Hong-Son Ngo (Communications and Networking), Mizuhito Ogawa and Bich-Thuy Thi Dong (Software Engineering and Information Systems), Chi-Mai Luong and Muriel Visani (Image, Language, and Speech Processing), Son Pham and Ly Le (Computational Biomedicine).

We would like to express our sincere thanks to the following organizing committee members: Huynh Thi Thanh Binh and Nguyen Ngoc Doanh for organizing the workshops; Duong Tuan Anh and Luong Duy for arranging the tutorials; Dang Thi Thu Hien for handling the registration and financial issues; Nguyen Thai Nghe and Le Duc Hau for compiling all the accepted papers and working with the IEEE team to produce this proceedings; and Tung Nguyen, Nguyen Thi Minh Huyen, and Ho Tuong Vinh for local arrangements to make the conference go smoothly.

We are grateful to all the sponsors of the conference, and the RIVF Steering Committee for its guidance and Student Travel Award and Early Career Research Award sponsorship. We would also like to express our gratitude to Thuyloi University for hosting this conference. Last but not least, our sincere thanks go to all of the paper authors and conference participants, and especially the local team members and volunteering helpers for their hard work to make the event possible.

We hope you have enjoyed RIVF 2016 and your time in Hanoi, Vietnam.

November 2016

Vincenzo Piuri, Tu-Bao Ho, Tru Cao, and Yo-Sung Ho

Organizing Committees

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Mizuhito Ogawa	Japan Advanced Institute of Science and Technology, Japan
Vincenzo Piuri	University of Milan, Italy
Huynh Quyet Thang	Hanoi University of Science and Technology, Vietnam
Nguyen Thanh Thuy	University of Engineering and Technology, Vietnam National University at Hanoi
Douglas Zuckerman	IEEE, USA

Track Chairs

Computational Intelligence and Big Data Analytics

Hung-Son Nguyen	Warsaw University, Poland
Quoc-Bao Vo	Swinburne University of Technology, Australia

Communications and Networking

Hsiao-Hwa Chen	National Cheng Kung University, Taiwan
Hong-Son Ngo	Hanoi University of Science and Technology, Vietnam

Image, Language and Speech Processing

Chi-Mai Luong	Institute of Information Technology, Vietnam Academy of Science and Technology
Muriel Visani	University of La Rochelle, France

Computational Biomedicine

Son Pham	Salk Institute, USA
Ly Le	International University, Vietnam National University at Ho Chi Minh City

Software Engineering and Information Systems

Mizuhito Ogawa	Japan Advanced Institute of Science and Technology, Japan
Bich-Thuy Thi Dong	John von Neumann Institute, Vietnam

2016 IEEE RIVF Final Program
November 07-09, 2016
Thuyloi University, Hanoi, Vietnam

Monday, November 07, 2016											
08:00-09:00	Registration Place: Lobby of University Auditorium										
09:00-09:30	Opening Session Master of Ceremonies: Phuong Nguyen Place: University Auditorium										
	Opening Speech by Honorary Chairs Nguyen Quang Kim & Douglas Zuckerman Welcome Speech by General Chairs Vincenzo Piuru & Tu-Bao Ho Program Summary by PC Chairs Tru Cao & Yo-Sung Ho										
09:30-10:30	Keynote Talk 1 IEEE's New Technology Initiatives and ComSoc's Leading Role Harvey Freeman - President of IEEE Communications Society Chair: Douglas Zuckerman Place: University Auditorium										
10:30-11:00	Coffee Break Place: University Conference Area										
11:00-12:30	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Computational Intelligence and Big Data Analytics I (1L + 3R) Chair: Vincenzo Piuri Room: 5-K1</th> <th style="width: 50%; text-align: center;">Image, Language, and Speech Processing I (1L + 2R + 1S) Chair: Kang Hyeon Rhee Room: 3-K1</th> </tr> </thead> <tbody> <tr> <td>83 (L). Accelerating the Distributed Simulations of Agent-Based Models using Community Detection Antoniya Petkova, Martin Dimitrov, Charles Hughes and Narsingh Deo</td> <td>24 (L). New No-Reference Stereo Image Quality Method for Image Communication Ying Wang, Mei Yu, Fen Chen and Gangyi Jiang</td> </tr> <tr> <td>71 (R). About Cooperation of Multiagent Collective Products: An Approach in the Context of Cyber-Physical Systems Afra Khenifar, Jean-Paul Jamont, Michel Occello, Choukri-Bey Ben-Yelles and Mouloud Koudil</td> <td>17 (R). Blind Deblurring using Adaptive Image Model Ngoc Thuy Le and Ngoc-Minh Nguyen</td> </tr> <tr> <td>64 (R). A New Viral Marketing Strategy with the Competition in the Large-Scale Online Social Networks Van Canh Pham, Dung Ha, Quoc Dung Ngo, Chi Quang Vu and Xuan Huan Hoang</td> <td>31 (R). Fast Parallel Blur Detection of Digital Images Giang Son Tran, Thi Phuong Nghiem, Nhat-Quang Doan, Alexis Drogoul and Chi Mai Luong</td> </tr> <tr> <td>65 (R). An Improved Artificial Immune Network for Solving Construction Site Layout Optimization Duc Quang Vu, Van Truong Nguyen and Xuan Huan Hoang</td> <td>69 (S). An Approach to Counting Brown Planthopper in Images Containing Overlapping Individuals Tran Cong Nghi, Tran C. An and Hiep Huynh</td> </tr> </tbody> </table>	Computational Intelligence and Big Data Analytics I (1L + 3R) Chair: Vincenzo Piuri Room: 5-K1	Image, Language, and Speech Processing I (1L + 2R + 1S) Chair: Kang Hyeon Rhee Room: 3-K1	83 (L). Accelerating the Distributed Simulations of Agent-Based Models using Community Detection Antoniya Petkova, Martin Dimitrov, Charles Hughes and Narsingh Deo	24 (L). New No-Reference Stereo Image Quality Method for Image Communication Ying Wang, Mei Yu, Fen Chen and Gangyi Jiang	71 (R). About Cooperation of Multiagent Collective Products: An Approach in the Context of Cyber-Physical Systems Afra Khenifar, Jean-Paul Jamont, Michel Occello, Choukri-Bey Ben-Yelles and Mouloud Koudil	17 (R). Blind Deblurring using Adaptive Image Model Ngoc Thuy Le and Ngoc-Minh Nguyen	64 (R). A New Viral Marketing Strategy with the Competition in the Large-Scale Online Social Networks Van Canh Pham, Dung Ha, Quoc Dung Ngo, Chi Quang Vu and Xuan Huan Hoang	31 (R). Fast Parallel Blur Detection of Digital Images Giang Son Tran, Thi Phuong Nghiem, Nhat-Quang Doan, Alexis Drogoul and Chi Mai Luong	65 (R). An Improved Artificial Immune Network for Solving Construction Site Layout Optimization Duc Quang Vu, Van Truong Nguyen and Xuan Huan Hoang	69 (S). An Approach to Counting Brown Planthopper in Images Containing Overlapping Individuals Tran Cong Nghi, Tran C. An and Hiep Huynh
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	Dang Xuan Binh and Duong Tuan Anh	Van Hai Do, Nancy F. Chen, Boon Pang Lim and Mark Hasegawa-Johnson
	37 (R). Combining Transfer Learning and Co-training for Student Classification in an Academic Credit System Hoang Nguyen, Chau Vo and Hua Phung Nguyen	99 (R). Speed Up Temporal Median Filter and Its Application in Background Estimation Thanh-Sach Le, Nhu-Tai Do and Kazuhiko Hamamoto
	4 (R). An Effective GRASP+VND Metaheuristic for the k-Minimum Latency Problem Ban Ha Bang and Nguyen Duc Nghia	100 (R). Spatial and Spectral Features Utilization on a HyperSpectral Imaging System for Rice Seed Varietal Purity Inspection Hai Vu, Christos Tachtatzis, Paul Murray, David Harle, Kien Dao Trung, Lan Le Thi, Ivan Andonovic and Stephen Marshall
18:30-21:00	Reception Place: K1 Restaurant	
Tuesday, November 08, 2016		
09:00-09:30	Registration Place: Lobby of University Auditorium	
09:30-10:30	Keynote Talk 2 Big Data Initiatives in China: Opportunities and Challenges Joshua Huang - Director of Big Data Institute, Shenzhen University Chair: Tu-Bao Ho Place: University Auditorium	
10:30-11:00	Coffee Break Place: University Conference Area	
11:00-12:25	Computational Biomedicine I (1L + 2R + 1S) Chair: Thanh-Sach Le Room: 5-K1	Information, Language, and Speech Processing IV (1L + 2R + 1S) Chair: Thanh-Huong Le Room: 3-K1
	22 (L). Detection of Lesion Region in Skin Images by Moment of Patch Dao Nam Anh	96 (L). Towards a Syntactically and Semantically Enriched Lexicon for Vietnamese Processing Thi Huyen Nguyen, Minh Hai Nguyen, Thi Minh Huyen Nguyen and The Quyen Ngo
	10 (R). Real-Time Brainwave-Controlled Interface Using P300 Component in EEG Signal Processing Kha Ha and Kha Vo	44 (R). A Hybrid Approach to Vietnamese Word Segmentation Tuan-Phong Nguyen and Anh-Cuong Le
	38 (R). An Artificial Neural Network Approach for Electroencephalographic Signal Classification towards Brain-Computer Interface Implementation Hoang-Anh Nguyen, Hoang Tran, Tien-Dung Do, Thang Vu and Quyen Bui	61 (R). A Reordering Model for Vietnamese-English Statistical Machine Translation Using Dependency Information Viet Tran Hong, Huyen Vu Thuong, Thu Pham Hoai, Vinh Nguyen Van and Nguyen Le Minh
	29 (S). Imbalance Regulation for Identification of Abnormality in Medical Images Dao Nam Anh, Dang Xuan Tho, Ngo Quoc Tao and Bui Duong Hung	46 (S). Scoring and Ranking an Explanatory Sentence by Improving BM25E and SumWordLR Methods Trung Thien Vo, Bac Le and Nguyen Le Minh
12:25-14:00	Lunch Place: K1 Restaurant	
14:00-15:10	Computational Biomedicine II (1L + 2R) Chair: Ha-Duong Phan Room: 5-K1	Information, Language, and Speech Processing V (1L + 1R + 1S) Chair: Tuong-Vinh Ho Room: 3-K1
	52 (L). Detection of New Drug Indications from Electronic Medical Records Tran-Thai Dang, Phetnidda Ouankhamchan and Tu-Bao Ho	14 (L). Streaming Aspect-Sentiment Analysis Vu Le Anh, Chien Phung Van, Cuong Vu Cao, Linh Ngo Van and Khoat Than Quang
	3 (R). System Pharmacology: Application of Network Theory in Predicting Potential Adverse Drug Reaction Based on Gene Expression Data Duy Pham, Bao-Khanh Le, Tu-Bao Ho and Ly Le	63 (R). A Fast and Efficient Reversible Watermarking Method Using Generalized Integer Transform Luyen Cao Thi and At Pham Van
	94 (R). Assessing Human Disease Phenotype Similarity Based on Ontology Duc-Hau Le, Ba-Su Pham and Anh-Minh Dao	92 (S). An Ontology-Based Coreference Resolution Approach for Aspect-Level Sentiment Analysis Thuy Le Thi, Hung Vo Thanh, Trung Mai Duc, Tho Quan Thanh and Tuoi Phan Thi
15:10-15:40	Coffee Break Place: University Conference Area	
15:40-16:50	Computational Biomedicine III (1L + 2R) Chair: Ly Le Room: 5-K1	Communications and Networking I (1L + 2R) Chair: Huu-Thanh Nguyen Room: 3-K1
	82 (L). A Multi-Scale Model for Studying Spatial Epidemic Spreading in an Office Building Thu Le Kim, Doanh Nguyen Ngoc, Anh Nguyen Thi Ngoc, Nghi Huynh Quang and Edouard Amouroux	36 (L). An Estimation Scheme Based on Pairwise Broadcast to Synchronize Wireless Sensor Networks Nasiroh Chedoloh and Watcharapan Suwansantisuk
	74 (R) Quantifying the Effect of Synchrony on the Persistence of Infectious Diseases in a Metapopulation	40 (R) Searching of Best-effort Messages in TTEthernet Switches during the Timely Blocking Intervals Ekarin Suethanuwong and Sangnapa Hirunmutraporn

	Tran Thi Cam Giang, Marc Choisy and Jean Daniel Zucke		
	21 (R). A Frequency-Based Gene Selection Method with Random Forests for Gene Data Analysis Thanh Trinh, DingMing Wu, Salman Salloum, Tung Nguyen and Joshua Zhexue Huang	60 (R) Malicious HTTP Communication Detection Based on Access Graph Analysis Manh Cong Tran, Sei Kudo and Yasuhiro Nakamura	
Free Evening			
Wednesday, November 09, 2016			
09:30-10:30	Keynote Talk 3 From Communication Data to Human Behaviours in Task-Specific Activities: Case of Air Traffic Management Vu Duong - Director of John von Neumann Institute, VNU-HCM Chair: Vincenzo Piuri Place: University Auditorium		
10:30-11:00	Coffee Break Place: University Conference Area		
11:00-12:05	Communications and Networking II (1L + 2R) Chair: Watcharapan Suwansantisuk Room: 1-K1	IEEE Volunteer Training Workshop Speaker: Vincenzo Piuri Room: 5-K1 (till 13:00)	Workshop on Vietnamese Language and Speech Processing Chair: Minh-Huyen T. Nguyen Room: 3-K1 (See presentation time at http://vlsp.org.vn) • Opening • Report on Named-Entity Recognition Evaluation Campaign: Data and Systems, Nguyen Thi Minh Huyen, Vu Xuan Luong • Vietnamese Named Entity Recognition using Token Regular Expressions and Bidirectional Inference, Phuong Le-Hong
	55 (L) A RESTful Task Allocation Mechanism for the Web of Things El Mehdi Khalfi, Jean-Paul Jamont, Michael Mrissa and Lionel Medini		
	70 (R) Load Balancing Using Multipath Routing in Network Functions Virtualization Tuan-Minh Pham and Linh Manh Pham		
	53 (R) Performance Evaluation of Distributed File Systems under Cloud Computing Environment: Small-File Problem Thanh Duong and Quoc Luu		
12:30-14:00	Lunch Place: K1 Restaurant		
14:00-15:05	Software Engineering and Computational Intelligence (1R + 3S) Chair: Bich-Thuy Dong Room: 1-K1	<ul style="list-style-type: none">• Named Entity Recognition in Vietnamese Text Using Conditional Random Fields, Vũ Anh, Lê Minh Tuấn, Nguyễn Việt Hưng• DSKTLAB-NER: Nested Named Entity Recognition in Vietnamese Text, Cam-Van Thi Nguyen, Thai-Son Pham, Thi-Hong Vuong, Ngoc-Vu Nguyen and Mai-Vu Tran• System Demo: VAIS-TTS: A High Quality Speech Synthesis Service for Vietnamese• System demo: Instrumentations controlled by Vietnamese voice, Viet Son Nguyen, Viet Tung Nguyen, Thi Ngoc Diep Do, Dang Khoa Mac• Report on Sentiment Analysis Evaluation Campaign: Data and Systems, Le Anh Cuong, Nguyen Thi Minh Huyen, Nguyen Viet Hung• DSKTLAB: Vietnamese Sentiment Analysis for Product Reviews, Quynh-Trang Thi Pham, Xuan-Truong Nguyen, Van-Hien Tran, Thi-Cham Nguyen and Mai-Vu Tran• A Simple Supervised Learning Approach to Sentiment Classification at VLSP 2016, Hy Nguyen, Tung Le, Viet-Thang Luong and Dien Dinh	
	79 (R) Domain-Driven Design Patterns: A Metadata-Based Approach Duc Minh Le, Duc-Hanh Dang and Viet-Ha Nguyen		
	43 (S) A Strongest Assumption Generation Method for Component-Based Software Verification Hoang-Viet Tran, Chi-Luan Le and Ngoc Hung Pham		
	84 (S) Similarity Kernel for User-based Collaborative Filtering Recommendation System Quoc Nghia Phan, Hoai Phuong Dang and Xuan Hiep Huynh		
	90 (S) An Approach Based on Max Flow Resolution for Minimizing Makespan of Personal Scheduling Problem Son Trang Hong, Huy Nguyen Van, Nguyen Huynh Tuong, Lang Tran Van and Ameer Soukhal		
15:05-17:05	Tutorial 3D Video Processing Techniques for Immersive Environments Speaker: Yo-Sung Ho Room: 1-K1	Tutorial Finding Research Topics and Writing Scientific Papers Speaker: Tu-Bao Ho Room: 5-K1	<ul style="list-style-type: none">• System Demo: Technical report for land market information system, Duong Nguyen Thanh, Ha Nguyen and Tu Nguyen• Panel Discussion and Closing
18:30-21:30	Gala Dinner Place: Sen Ho Tay Restaurant		

Time for paper presentation including approximately 5 mins for Q&A:

- Long presentation (L): 30 mins
- Regular presentation (R): 20 mins
- Short presentation (S): 15 mins

Keynotes

Keynote 1

IEEE's New Technology Initiatives and ComSoc's Leading Role

Dr. Harvey A. Freeman, President of IEEE Communications Society

Abstract. A lot of exciting activities are taken place now in the Communications Society. First, for those who are unaware of this Society, I will give you an overall view of the Society. Then I will talk about these new initiatives: 5G, Internet of Things (IoT), and Fog Computing. 5G is the fifth generation mobile technology and is expected to provide a number of improvements compared to its predecessors in terms of higher data rates (up to 1 Gbps), massive connectivity, flexible service creation and low latency, among others. IoT is the short label for the “Connected World” which extends the emphasis in communications from the connections between people to the connections between devices, the generation and analysis of data from diverse sources, and the actions that drive decisions and autonomous processes. Fog, which distributes computing, control, storage, and networking services closer to end users, is a natural extension of the Cloud—it bridges the Cloud and the endpoints to make computing possible anywhere along the continuum from the Cloud down to the end users. I will talk about the technology of these three initiatives as well as what ComSoc is doing in each. In conclusion, I will give a brief peek at what is coming down the road that ComSoc will want to be involved with in the future.



Biography. Harvey is President of HAF Consulting, a Minneapolis-based technology consulting and project management company. He has over thirty-nine years of experience in the communications field holding research, development, management, and consulting positions in major companies and government agencies. He received his B.S.E.E. degree from the University of Pennsylvania and Ph.D. in Electrical Engineering from the University of Illinois. Harvey is a long-term, enthusiastic volunteer in the Communications Society and currently is the President of the Society. Before this he held many ComSoc positions including Chief Information Officer, several Vice Presidencies, and three terms as ComSoc Treasurer. His numerous contributions to the technical growth of and membership advancement in ComSoc include first Editor-in-Chief/founder of the highly regarded IEEE Network Magazine, founder/first General Chair and past Standing Committee Chair of IEEE INFOCOM, and a founder of the IEEE Conference on Sensor and Ad Hoc Communications and Networks (SECON) and the IEEE Conference on Communications and Network Security (CNS). In 2001, he was honored with ComSoc's Meetings & Conferences Exemplary Service Award. In 2004, he received the Society's Donald W. McLellan Meritorious Service Award.

Keynote 2

Big Data Initiatives in China: Opportunities and Challenges

Prof. Joshua Huang, Director of Big Data Institute, Shenzhen University

Abstract. Implementing national big data strategy has been added in China 13th Five-year Plan which will be carried out in 2016-2020. In September 2015, the State Council of China published an action plan for promoting the development of big data, specifying the objectives and the key areas of big data development. Many big data initiatives are being started in governments, research community and industry in China. In this talk, I will first introduce some key initiatives in the areas of open government data for sharing, data resource development, big data research and technology innovation, and industrial applications. Then, I will discuss some opportunities and challenges in implementing this national big data strategy. After that, I will present some research activities at Big Data Institute of Shenzhen University, including new machine learning algorithms for high dimensional data analysis, an asymptotic ensemble learning strategy and distributed framework for implementing scalable algorithms for big data and technologies for building big data platform,. Finally, I will present a real application of big manufacturing data and some ideas for industrialization of big data technology.



Biography. Dr. Joshua Zhexue Huang is a distinguished professor at College of Computer Science and Software Engineering in Shenzhen University. He is the founding director of Big Data Institute of Shenzhen University, Director of State Information Center Shenzhen Big Data Institute and Director of Shenzhen Key Laboratory for High Performance Data Mining. He is also adjunct professor at Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences. Prof. Huang is known for his contributions to the development of a series of k-

means type clustering algorithms in data mining, such as k-modes, fuzzy k-modes, k-prototypes and w-k-means that are widely cited and used, and some of which have been included in commercial software. He has extensive industry expertise in business intelligence, data mining and big data analysis. He has been involved in numerous consulting projects in Australia, Hong Kong, Taiwan and mainland China. Dr Huang received his PhD degree from the Royal Institute of Technology in Sweden. He has published over 150 research papers in conferences and journals. In 2006, he received the first PAKDD Most Influential Paper Award. He was the program chair of PAKDD 2011, the local organization chair of ICDM 2014 and the conference co-chair of PAKDD 2016.

Keynote 3

From Communication Data to Human Behaviours in Task-Specific Activities: Case of Air Traffic Management

Prof. Vu Duong, Director of John von Neumann Institute, VNU-HCM

Abstract. Recent human dynamics research has unmasked astonishing statistical characteristics such as scaling behaviors in human daily activities. However, less is known about the general mechanism that governs the task-specific activities. In particular, whether there exists such scaling law when human is under high pressure remains an open question. Current air traffic management system is highly human-centered, in which safety is the most important factor to be concerned by air traffic controllers who always work under high pressure therefore it provides a unique platform to study scaling behavior of human activity under high pressure. In this talk, we discuss the extension of fluctuation scaling method to study air traffic controller's communication activity by investigating two empirical communication datasets. Taken the number of controlled flights as the size-like parameter, we found that the relationships between the average communication activity and its standard deviation in both datasets can be well described by Taylor's power law, with scaling exponent $\alpha \approx 0.77$ for the real operational data and $\alpha \approx 0.54$ for the real-time training data. The difference between the exponents suggests that human dynamics under pressure is more likely dominated by the exogenous force. This has allowed us to develop a general model and provide simulation evidences showing that the cognitive strategies could be the source of Taylor's law in controller's behavior. In this talk, emphasises are given on findings may lead to further understanding of human behavior such as eye movements in human observations under specific tasks.



Biography. Vu is currently Director of John von Neumann Institute, the center of excellence of Viet Nam National University Ho Chi Minh City for Applied Mathematics, Systems, Information and Knowledge Science. Prior to his appointment, he had been a Professor of Complex Systems (2003) for Ecole Pratique des Hautes Etudes - Sorbonne Paris, and Head of Innovative Research then Senior Scientific Advisor at EUROCONTROL, Europe (1995-2012). He served as Member, European Union SESAR Scientific

Committee (2010 – 2012) as well as co-Chair of International Conferences such as the IEEE – RIVF (2003 – 2007); US/Europe ATM R&D seminar (2009, 2011); ICRAT (2004 – 2010). He also served on several editorial boards including ATC Quarterly and Elsevier Transport Research - Part C: Technologies. Dr. Duong supervised more than 20 Doctoral Theses in Operations Research, Systems Science and Computer Science. Dr. Duong began his higher education at the prestigious Ecole Nationale des Ponts et Chaussées of France where he obtained the degree of Master in Engineering in 1986, and Ph.D. in Artificial Intelligence in 1990. He has published more than 80 articles in peer-reviewed journals and conferences. In his free time, Vu participates in Triathlons, including several IAAF International Marathons and Ironman 70.3 in Asia Pacific.

The Fourth International Workshop on Vietnamese Language and Speech Processing (VLSP 2016)

Chair: Dr. Minh-Huyen T. Nguyen, University of Science, VNU-HN
Room: 3-K1, 11:00-17:00, November 9

Workshop objectives

The goal of this workshop series is to attempt a synthesis of research in Vietnamese language and speech processing and to bring together researchers and professionals working in this domain. The VLSP 2016 edition will be composed of two parts: one part for VLSP software demonstration with technical reports, and an evaluation campaign on the tasks of named-entity recognition and opinion mining. As is traditional, one panel for the VLSP community exchange and discussion will be organized.

Software demonstration

All applications dealing with Vietnamese text processing or speech processing are welcome. Each demo system should be provided with a technical report.

Evaluation campaign

The evaluation campaign deals with two different tasks. One concerns named-entity recognition (NER), an essential task for information extraction applications. The evaluation will be limited in considering 3 types of entity: person, organization and location. The other concerns an opinion mining (OM) tool at sentence level, in which each given sentence should be classified as negative, positive or neutral.

The participants to the evaluation campaign will be asked to present their system in a dedicated short paper.

This campaign aims at automatically evaluating Vietnamese NER and OM systems, in order to promote the most efficient methods for these important tools. The organization of this campaign with sponsor from academia and industry will permit to build and offer to the VLSP community gold datasets for training and testing NER and OM systems.

Website: <http://vlsp.org.vn>

IEEE Volunteer Training Workshop

Speaker: Professor Vincenzo Piuri, Milan University

Room: 5-K1, 11:00-13:00, November 9

IEEE has identified that many Volunteers seek to gain a better understanding of available opportunities and common practices, in order to become more active within the association. To meet this need, IEEE Technical Activities has organized a free, one-day workshops aimed at training and empowering Volunteers to play a bigger role in building IEEE technical communities, organizing successful IEEE activities, and training future generations of Volunteers.

The workshop is led by Vincenzo Piuri and is designed to provide attendees with information and tools in the following areas of IEEE activity:

- Global and Local Technical Communities
- Conferences
- Publications
- Educational Activities

Following the conclusion of the workshop, participants are expected to increase and expand their proactive roles within the above areas of IEEE focus, becoming prominent IEEE Volunteer leaders, both globally and locally. In addition, they are encouraged to replicate this training activity in their local communities, passing this knowledge on to other potential Volunteer leaders, to cultivate a strong, knowledgeable, and engaged Volunteer base.

To facilitate the logistic management, we will greatly appreciate if you will register at the link below:

<http://ieee.fluidsurveys.com/surveys/kbair/ieee-workshop-registration-hanoi/>

You can attend anyway the workshop even though you did not registered in advance.



Vincenzo Piuri

IEEE Past Vice President for Technical Activities (2016)

IEEE Vice President for Technical Activities (2015)

IEEE Systems Journal Editor-in-Chief (2013-17)

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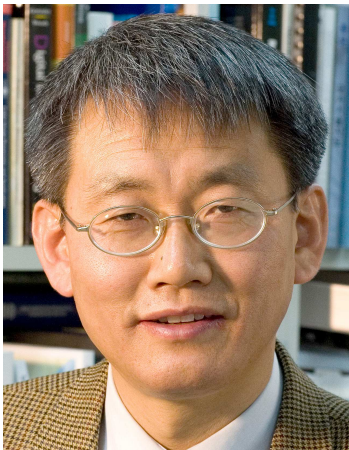
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Tutorial

3D Video Processing Techniques for Immersive Environments

Professor Yo-Sung Ho
Gwangju Institute of Science and Technology, Korea
Room: 1-K1, 15:05-17:05, November 9

Abstract: In this tutorial lecture, we are going to cover the current state-of-the-art technologies of 3D video processing in VR/AR immersive environments. After defining the basic requirements for immersive multimedia services, we will cover various multi-modal immersive media processing techniques. We also address the depth estimation problem for natural 3D scenes and discuss several challenging issues of 3D video processing, such as camera calibration, image rectification, illumination compensation and color correction.



Biography: Dr. Yo-Sung Ho received the B.S. and M.S. degrees in electronic engineering from Seoul National University, Seoul, Korea, in 1981 and 1983, respectively, and the Ph.D. degree in electrical and computer engineering from the University of California, Santa Barbara, in 1990. He joined ETRI (Electronics and Telecommunications Research Institute), Daejeon, Korea, in 1983. From 1990 to 1993, he was with North America Philips Laboratories, Briarcliff Manor, New York, where he was involved in development of the Advanced Digital High-Definition Television (AD-HDTV) system. In 1993, he rejoined the technical staff of ETRI and was involved in development of

the Korean DBS Digital Television and High-Definition Television systems. Since 1995, he has been with Gwangju Institute of Science and Technology (GIST), where he is currently Professor of Information and Communications Department. Since August 2003, he has been Director of Realistic Broadcasting Research Center at GIST in Korea. He has served as an Associate Editor of IEEE Transactions on Multimedia (T-MM) and IEEE Transactions on Circuits and Systems Video Technology (T-CSVT). His research interests include Digital Image and Video Coding, Image Analysis and Image Restoration, Three-dimensional Image Modeling and Representation, Advanced Source Coding Techniques, Three-dimensional Television (3DTV) and Realistic Broadcasting Technologies.

Tutorial

Finding Research Topics and Writing Scientific Papers

Professor Tu-Bao Ho
Japan Advanced Institute of Science and Technology
Room: 5-K1, 15:05-17:05, Nov 9

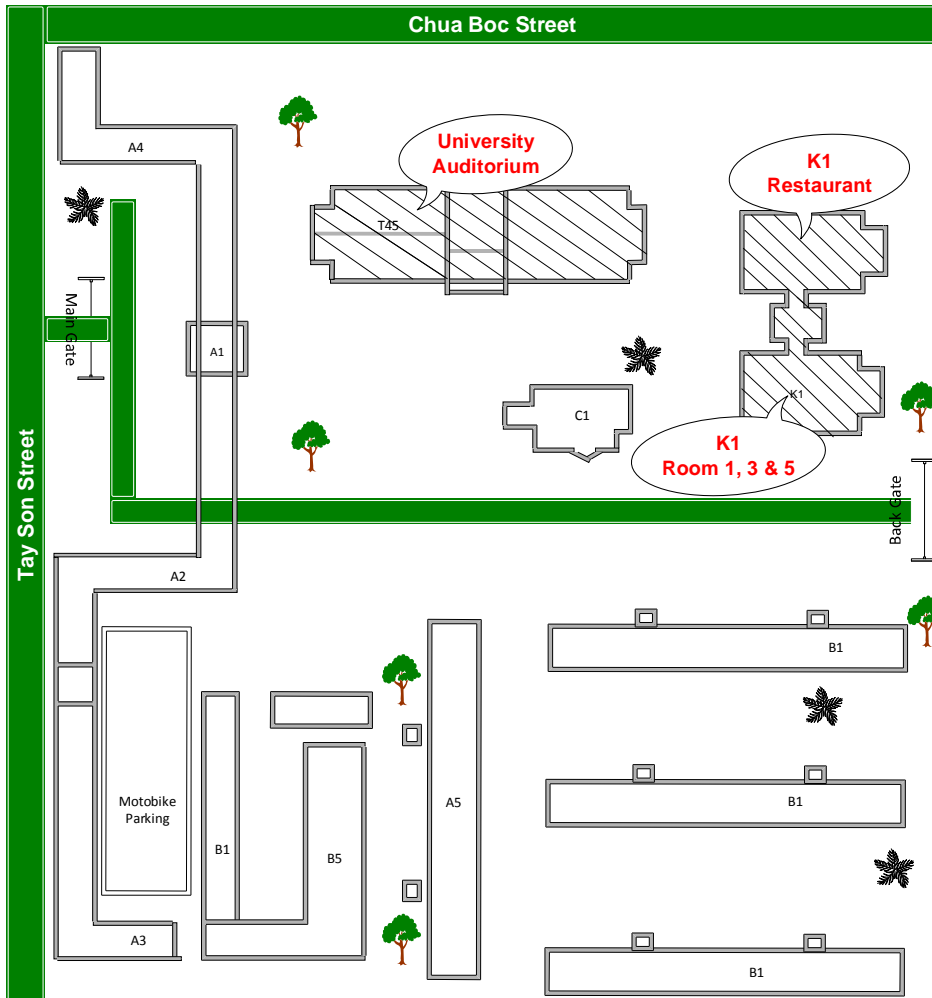
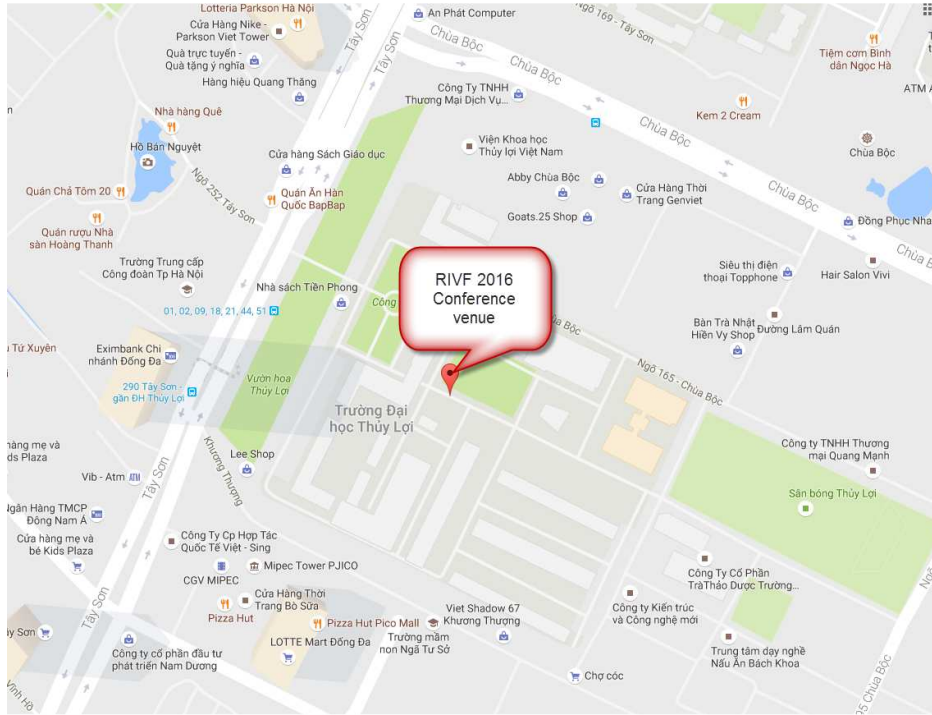
Abstract: The purpose of this tutorial is to introduce attendees, especially the students and young researchers, to the main issues when finding a research topic and when writing scientific a paper. The tutorial starts with an emphasis on the importance of finding a problem that is worth to do and when writing papers as a part of the research work. It then discusses on important factors for doing these tasks. The tutorial is presented with a number of concrete examples and an open discussion with audience.



Biography: Tu-Bao Ho is Professor of School of Knowledge Science at Japan Advanced Institute of Science and Technology. He received a bachelor degree in applied mathematics from Hanoi University of Technology (1978), M.S. and Ph.D. degrees in Computer Science from Pierre and Marie Curie University, Paris (1984, 1987), and Habilitation from Paris Dauphine University (1998). His research interest includes artificial intelligence, knowledge-based systems, machine learning and data mining, computational science, bio-medicine data analytics. He is author and co-author of about 70 journal papers, 30 book chapters and 200 refereed conference papers.

Conference Venue

175 Tay Son Street, Dong Da District, Hanoi, Vietnam



General Information

All questions and problems should be addressed to members of Organizing Committee at the registration and help desk.

Conference Registration

Opening hours
are as follows:

Nov 7: from 8:00 to 9:00

Nov 8: from 9:00 to 9:30

Badge

For your convenience, please wear your badge all the time.

Coffee Break

During morning and afternoon break, coffee and tea will be served at the Lobby of the Conference area.

Lunch

During the conference you are offered lunch in the **K1 Restaurant** within campus of Thuyloi University. Please ask our staffs for direction to the restaurant.

Opening Ceremony

Opening Ceremony will be held on Nov 07, at 09:00, at the **University Auditorium**.

Gala Dinner

All registered participants are invited to the Gala Dinner on Wednesday Nov 9, starting 18:30, at The Sen Tay Ho Restaurant. It is located at 614 Lac Long Quan, Tay Ho, Hanoi (About 45 minute from Conference venue). There is a shuttle bus to pickup participants in front of Lobby of the Conference Venue, the departing time is 17:30, Nov 9. After Gala Dinner, the shuttle bus will also bring participants to hotels and Conference Venue