

# Program

## The Fifth International Conference on Artificial Intelligence and Computational Intelligence (AICI 2024)

January 13-14, 2024, Hanoi, Vietnam

Themes: **Machine Learning and Other Soft Computing Techniques: Biomedical and Related Applications**

Organized by Thang Long University with sponsor of IFSA by virtual mode  
Add: Library Meeting Room, Nghiem Xuan Yem Road, Hoang Mai District, Hanoi, Vietnam

Link to AICI 2024 meeting: <https://meet.google.com/kbk-qzmz-jao>

(Open from 7:30 am of 13 January 2024 to 12:00 am of 14 January 2024, Vietnam time)  
(Website: <http://aici2024.thanglong.edu.vn>)

## January 13 (Saturday)

8:00-8:20

### Opening Ceremony

Greetings from Thang Long University  
Greetings from Scientific Committee by Nguyen Hoang Phuong  
Greetings from Vice President of IFSA by Vladik Kreinovich

8:20-9:00

### Keynote Speech 1: Chair: **Thái Quang Vinh**

Institute of Information Technology,  
VAST, Vietnam

### Title: **Why Bump Reward Function Works Well In Training Insulin Delivery Systems**

(Authors: Lehel Denes-Fazakas, Laszlo Szilagy, Gyorgy Eigner, Olga Kosheleva, Vladik Kreinovich, and Hoang-Phuong Nguyen)

**Professor Vladik Kreinovich**

IFSA Vice President, University of Texas at El Paso, USA

9:00- 10:40

### ***FR11-A: Computational Intelligence and Fuzzy Systems***

Chair: **Nguyen Hoang Phuong**  
Thang Long University, Vietnam

SAT1-A1

9:00-9:20

### **How to Estimate Unknown Unknowns: From Cosmic Light to Election Polls** **Talha Azfar**

Department of Electrical and Computer Engineering, University of Texas at El Paso  
500 W. University, El Paso, TX 79968, USA, e-mail: [tazfar@miners.utep.edu](mailto:tazfar@miners.utep.edu)

### **Vignesh Ponraj and Vladik Kreinovich**

Department of Computer Science, University of Texas at El Paso, 500 W. University  
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### **Nguyen Hoang Phuong**

Artificial Intelligence Division, Information Technology Faculty, Thang Long  
University Nghiem Xuan Yem Road, Hoang Mai District, Hanoi, Vietnam

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**SAT1-A2**

9:20-9:40

**We Can Always Reduce a Non-Linear Dynamical System to Linear – at Locally -  
- But Does It Help?**

**Orsolya Csiszár**

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and Institute of Applied Mathematics John von Neumann Faculty of Informatics

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**Gabor Csiszár**

Biomatics and Applied AI Institute John von Neumann Faculty of Informatics Obuda

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**Olga Kosheleva**

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**Vladik Kreinovich**

Department of Computer Science, University of Texas at El Paso, 500 W. University

El Paso, Texas 79968, USA, e-mail: vladik@utep.edu

**Nguyen Hoang Phuong**

Artificial Intelligence Division, Information Technology Faculty, Thang Long

University Nghiem Xuan Yem Road, Hoang Mai District, Hanoi, Vietnam e-mail:

nhphuong2008@gmail.com

**SAT1-A3**

9:40-10:00

**How to Best Retrain a Neural Network If We Added One More Input  
Variable**

**Saeid Tizpaz-Niari and Vladik Kreinovich**

Department of Computer Science, University of Texas at El Paso, 500 W. University

El Paso, Texas 79968, USA, e-mail: saeid@utep.edu, vladik@utep.edu

**10:00 -10:20**

**Coffee Break**

**SAT1-A4**

10:20-10:40

**Towards a Psychologically Natural Relation Between Colors and Fuzzy  
Degrees**

**Victor L. Timchenko**

Admiral Makarov National University of Shipbuilding, 9 Heroes of Ukraine Avenue Mykolaiv 054025, Ukraine, e-mail: vl.timchenko58@gmail.com

**Yuriy P. Kondratenko**

Petro Mohyla Black Sea National University, 10, 68th Desantnykiv Str. Mykolaiv 054003, Ukraine

and Institute of Artificial Intelligence Problems Ministry of Education and Science (MES) of Ukraine and National Academy of Sciences (NAS) of Ukraine Kyiv 01001, Ukraine e-mail: y\_kondrat2002@yahoo.com

**Olga Kosheleva**

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**SAT1-A5**  
10:40-11:00

**Algebraic Product Is the Only "And"-Operation (t-Norm) for Which Normalized Intersection Is Associative: A Proof**

**Thierry Denœux**

Universite de technologie de Compiègne, U.M.R. C.N.R.S. 6599 Heudiasyc  
Centre de Recherches de Royallieu, B.P. 20529 F-60205 Compiègne Cedex France  
and Institut Universitaire de France, Paris, France e-mail: Thierry.Denoeux@utc.fr

**Vladik Kreinovich**

Department of Computer Science, University of Texas at El Paso, 500 W. University  
El Paso, Texas 79968, USA, e-mail: vladik@utep.edu

**11:00-11:40**

**Keynote Speech 2: Chair: Nguyen Thi Huyen Chau**

Artificial Intelligence Laboratory,  
Thang Long University, Vietnam

**Title: Knowledge Management for Clinical Decision Support---Synopsis and Future**

**Professor Klaus-Peter Adlassnig**

Institute of Artificial Intelligence, Medical University of Vienna, Austria & Medexter  
Healthcare, Vienna, Austria

**11:40 -13:30**

**Lunch**

**13:30-14:50**

***FRII-B: Artificial Intelligence and Computational Intelligence in Medicine***

Chair: **Klaus-Peter Adlassnig**

Institute of Artificial Intelligence,  
Medical University of Vienna, Austria &  
Medexter Healthcare, Vienna, Austria

**SAT1-B1**  
13:30-13:50

**Health Digital Twins with Clinical Decision Support and Medical Imaging**

**Moritz Grob, Andrea Rappelsberger, Klaus-Peter Adlassnig**

Medical University of Vienna, Center for Medical Data Science, Institute of Artificial  
Intelligence, Spitalgasse 23, 1090 Vienna, Austria  
e-mail: klaus-peter.adlassnig@meduniwien.ac.at

**Moritz Grob, Klaus-Peter Adlassnig**

Medexter Healthcare, Borschkegasse 7/5, 1090 Vienna, Austria, e-mail:  
kpa@medexter.com

**SAT1-B2**  
13:50-14:10

**Extract high-potential negative samples for drug disease prediction**

**Manh Hung Le**

Electric Power University, Ha Noi, Viet Nam, e-mail: hunglm@epu.edu.vn  
<https://orcid.org/0000-0001-9440-5567>

**Nam Anh Dao**

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**Xuan Tho Dang**

Academy of Policy and Development, Ha Noi, Viet Nam,  
e-mail: thodx@apd.edu.vn <https://orcid.org/0000-0002-7654-5942>

**SAT1-B3**  
14:10-14:30

**A Classification System of Mammograms Based on Convolutional Neural Networks**

**Nguyen Hoang Phuong, Nguyen Duc Dan**

Artificial Intelligence Division, Information Technology Faculty, Thang Long University, Nghiem Xuan Yem Road, Hoang Mai District, Hanoi, Vietnam email: nhphuong2008@gmail.com, nddan02@gmail.com

**Nguyen Viet Dung**

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**Ha Manh Toan**

Institute of Information Technology, Vietnam Academy of Science and Technology, Hanoi, Vietnam, email:hmtolan@ioit.ac.vn

**Nguyen Khac-Dung, Dao Van Tu**

Vietnam National Cancer Hospital, 30 Cau Buou, Tan Trieu, Thanh Tri, Hanoi, Vietnam Emails: khacdung.nguyen@bvk.org.vn,daovantu@hmu.edu.vn

**SAT1-B4**  
14:30-14:50

**Fruit calorie determination system for Dieters and Athletes using Deep learning**

**Ngo Quoc Vi, Nguyen Chi-Ngon and Nguyen Thai-Nghe**  
Can Tho University, Can Tho City, Viet Nam  
Email:{ntnghe, ncngon}@ctu.edu.vn

**14:50 - 15:10**

**Coffee Break**

**15:10 - 16:50**

***FRI2-A: AI and Applications***

Chair: **Đào Nam Anh**  
Electric Power University, Hanoi, Vietnam

**SAT2-A1**  
15:10 - 15:30

**Cognitive States Prediction with KNN and TomekLinks**

**Quynh Anh Nguyen**

Electric Power University, Hanoi, Vietnam <https://orcid.org/0000-0003-0453-7051>

**Nam Anh Dao**

Electric Power University, Hanoi, Vietnam <https://orcid.org/0000-0002-0536-8686> E-mail: anhdn@epu.edu.vn

**SAT2-A2**  
15:30 - 15:50

**Promoting STEM-Integrated Learning through Engineering Design: High School Students' Automatic Hand Washers**

**Linh Thuy Thi Pham<sup>2</sup>, Hai Thanh Nguyen<sup>1</sup>, Long Diep<sup>2</sup>, Hoa Huu Nguyen<sup>1</sup> and Ngoc Cam Thi Tran<sup>3</sup>**

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Email: nthai.cit@ctu.edu.vn

<sup>3</sup>Dong Thap University, Đồng Tháp, Vietnam,

Email: ngoctran.ahnkct@gmail.com

**SAT2-A3**  
15:50 - 16:10

**KNN-SMOTE: An Innovative Resampling Technique Enhancing the Efficacy of Imbalanced Biomedical Classification**

**Xuan Tho Dang**

Academy of Policy and Development, Ha Noi, Viet Nam, e-mail: thodx@apd.edu.vn

**Thanh Tươi Lê**

Vinh University of Technology and Education, Vinh, Viet Nam, e-mail: fredleektv@gmail.com

**SAT2-A4**  
16:10 - 16:30

**Human detection in video for security surveillance systems**

**Nguyen Thai-Nghe<sup>1</sup>, Pham Thanh-Son<sup>2</sup> and Nguyen Huu-Hoa<sup>1</sup>**

<sup>1</sup>Can Tho University, 3-2 Street, Can Tho, Vietnam, email:sonpt@thvl.vn

<sup>2</sup>Vinh Long Radio and Television Station, 50 Pham Thai Buong Street, Vinh Long, Vietnam, Email: {ntnghe,nhhoa}@ctu.edu.vn

**SAT2-A5**  
16:30 - 16:50

**Fake Face Detection with Separable Convolutions**

**Hai Thanh Nguyen, Dat Tien Nguyen, Thien Thanh Tran, Hoa Huu Nguyen, and Nguyen Thai-Nghe**

Can Tho University, Can Tho, Vietnam

Emails: nthal.cit@ctu.edu.vn, nhhoa@ctu.edu.vn, [ntnghe@cit.ctu.edu.vn](mailto:ntnghe@cit.ctu.edu.vn)

**18:30 pm**

**Banquet at Maison Sen Restaurant**

Add: 275 Nguyen Trai Road, GOLD TOWER, 6 floor, using D or E Lift

Table code: 18. Contact: Mob: 0856480037 (Maison Sen), 0904128118 (Phuong)

## **JANUARY 14 (Sunday)**

**8:30-10:30**

***SAT1-A: Soft Computing and Applications***

**Chair: Vladik Kreinovich**

IFSA Vice President, University of Texas at El Paso, USA

**SUN1-A1**

8:30-8:50

**OAGRE: Outlier Attenuated Gradient Boosted Regression**

**John Hawkins**

Transitional AI Research Group & Getting-Data-Science-Done.com, (Sydney, Australia), e-mail: john@getting-data-science-done.com

**SUN1-A2**

8:50-9:10

**Improve The Effectiveness of Predicting Student Dropouts Based on Deep Learning and SMOTE Models**

**Xuan Tho Dang**

Academy of Policy and Development, Ha Noi, Viet Nam, e-mail: thodx@apd.edu.vn

**SUN1-A3**

9:10-9:30

**Data processing and feature engineering for stock price trend prediction**

**Nguyen Thi Huyen Chau, Doan Trung Phong**

Artificial Intelligence Laboratory, Thang Long University, Nghiem Xuan Yem Road Hoang Mai District, Hanoi, Vietnam,

e-mail: huyenchau@thanglong.edu.vn, phongdt@thanglong.edu.vn

**SUN1-A4**

9:30-9:50

**Distributed computing in training machine learning models**

**Nguyen Thi Huyen Chau, Ho Hong Truong, and Trinh Duc Tan**

Artificial Intelligence Laboratory, Thang Long University, Nghiem Xuan Yem Road Hoang Mai District, Hanoi, Vietnam,

email:huyenchau@thanglong.edu.vn,truonghh@thanglong.edu.vn,trinhductan1003201@gmail.com

**SUN1-A5**

9:50-10:10

**An Approach to Instrumental Song Classification Utilizing Spectrogram and Convolutional Neural Networks**

**Anh Tuan Le, Hien Thanh Thi Nguyen, Hoa Huu Nguyen, Hai Thanh Nguyen**

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nthai.cit@ctu.edu.vn

**SUN1-A6**  
10:10-10:30

**Heterogeneous Transfer Learning Using Variance-based Mapping and Pre-trained Feature Crossover**

**Nguyen-Thuan Duong<sup>1</sup>, Dinh-Thang Duong<sup>2</sup>, Hong-Phuc Nguyen<sup>3</sup>, Quang-Vinh Dinh<sup>4</sup>**

<sup>1</sup>Department of Computer Science, Vietnam National University - University of Information Technology, Ho Chi Minh City, Vietnam

<sup>2</sup>Department of Computer Science, Vietnam National University - University of Information Technology, Ho Chi Minh City, Vietnam

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<sup>4</sup>Department of Computer Science, Vietnamese German University, Binh Duong, Vietnam

**10:30**

**Closing**