

**DEXA 2023**

**34<sup>th</sup> DEXA Conferences and Workshops**  
28 - 30 August 2023 Penang, Malaysia



# PROGRAMBOOK





## **The 34<sup>th</sup> DEXA Conferences & Workshops 2023**

### **THE CONFERENCES**

#### **DEXA 2023**

34<sup>th</sup> International Conference on Database and Expert Systems Applications

#### **DaWaK 2023**

25<sup>th</sup> International Conference on Big Data Analytics and Knowledge Discovery

#### **EGOVIS 2023**

12<sup>th</sup> International Conference on Electronic Government and the Information Systems Perspective

### **THE WORKSHOPS**

#### **AISys 2023**

3<sup>rd</sup> International Workshop on AI System Engineering: Math, Modelling and Software

#### **IWCFS 2023**

4<sup>th</sup> International Workshop on Cyber-Security and Functional Safety in Cyber-Physical Systems



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## Welcome Message

Welcome to the 34<sup>th</sup> DEXA 2023 Conferences & Workshops!



**Gabriele Kotsis**

More than three decades ago, Prof. Dr. Roland Wagner and Prof. Dr. A Min Tjoa founded DEXA to fulfill the critical need for an international conference focused on the evolving landscapes of Databases and Expert Systems Applications during that era.

As the organizers of this conference, it brings us immense satisfaction to witness DEXA's evolution. What began as a gathering of forward-thinking academics 34 years ago in Austria has now blossomed into a remarkable global assembly, with over 5000 international participants, distinguished speakers, and esteemed guests in the past 33 years.

DEXA 2023 owes its success to the collaborative efforts of the Institute of Telecooperation at Johannes Kepler University Linz, the Software Competence Center Hagenberg (SCCH), and co-hosting by Universiti Sains Malaysia (USM).

Our commitment remains unwavering in providing you with three distinct dimensions of experience:

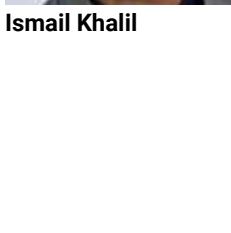
- **A Learning Journey:** This year's program boasts a robust lineup of 112 thought-provoking presentations and three distinguished keynote addresses across 35 sessions.
- **A Networking Voyage:** You'll have the opportunity to cultivate valuable partnerships and enduring friendships with like-minded scholars across the globe. The diversity is evident, with participants from 30 countries and representation from over 75 research and academic institutions.
- **A Motivational Expedition:** Our emerging colleagues will be exposed to the latest breakthroughs in our fields, propelling them towards their own research and discoveries.

The social program is equally captivating, featuring a Welcome Reception and a Conference Dinner.



**A Min Tjoa**

As organizers, we extend our heartfelt gratitude to the DEXA conferences and workshops program committee chairs, along with all committee members, for their meticulous review of paper submissions and for crafting this captivating program. We are confident that the presentations and talks in this year's lineup will leave you inspired and foster future collaborations.



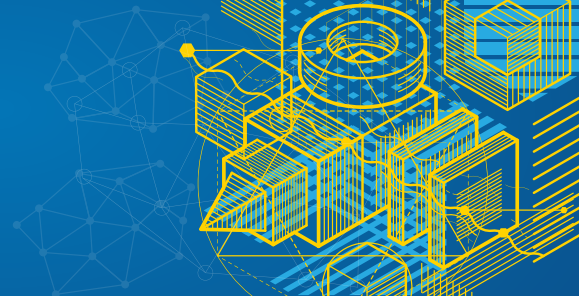
**Ismail Khalil**

Our sincere appreciation goes out to our distinguished keynote speakers: Stéphane Bressan from the National University of Singapore, Robert Wrembel from the Faculty of Computing and Telecommunications at Poznan University of Technology in Poland, and Osmar R. Zaiane, an Amii Fellow & Canada CIFAR AI Chair from the University of Alberta in Canada.

Every effort has been made to ensure your comfort and convenience. The dedication of these individuals, and countless others working behind the scenes, contributes to the unique atmosphere that makes each DEXA conference feel like a welcoming homecoming.

So, welcome to Penang for the 2023 DEXA conferences and workshops. We extend our heartfelt gratitude for your participation and sincerely hope you find immense enjoyment in this conference."

Gabriele Kotsis  
A Min Tjoa  
Ismail Khalil



## The Organisation

### **Steering Committee:**

- Gabriele Kotsis, Johannes Kepler University Linz, Austria
- A Min Tjoa, Vienna University of Technology, Austria
- Robert Wille, Software Competence Center Hagenberg, Austria
- Bernhard Moser, Software Competence Center Hagenberg, Austria
- Ismail Khalil, Johannes Kepler University Linz, Austria

### **DEXA Program Committee Co-Chairs:**

- Christine Strauss, University of Vienna, Austria
- Toshiyuki Amagasa, University of Tsukuba, Japan

### **DAWAK Program Committee Co-Chairs:**

- Robert Wrembel, Poznan University of Technology; Artificial Intelligence and Cybersecurity Center (Poland)
- Johann Gamper, Free University of Bozen-Bolzano, Italy

### **EGOVIS Program Committee Co-Chairs:**

- Andrea Kő, Corvinus University Budapest, Hungary
- Enrico Francesconi, Italian National Research Council, Publication Office of the EU, Italy
- Adeleh Asemi, University of Malaya, Malaysia

### **AI Sys Workshop Co-Chairs:**

- Paolo Meloni, University of Cagliari, Italy
- Maqbool Khan, PAF-IASST, Pakistan
- Gerald Czech, Upper Austrian Fire Brigade Association, Austria
- Thomas Hoch, Software Competence Center Hagenberg Austria
- Bernhard Moser, Software Competence Center Hagenberg Austria

### **IWCFS Workshop Co-Chairs:**

- Atif Mashkoo, Johannes Kepler University Linz, Austria
- Johannes Sametinger, Johannes Kepler University Linz, Austria

### **Organizing Committee:**

- Hesti Sudjana, Johannes Kepler University Linz, Austria
- Paul Wiesinger, Johannes Kepler University Linz, Austria
- Heriansyah, Johannes Kepler University Linz, Austria

### **Co-Organizers & Sponsors:**

- Software Competence Center Hagenberg (SCCH)
- Johannes Kepler University Linz (JKU Linz)
- The International Organization for Information Integration and Web-based Applications & Services (@WAS Organization)
- Austrian Society for Artificial Intelligence (ASAI)
- Universiti Sains Malaysia (USM)
- Penang Convention & Exhibition Bureau (PCEB)

## Keynote Speakers

### Keynote Talk

**Monday, 28 August 2023 – 09:00 – 12:00**



### Keynote Talk 1

#### Physics-informed Machine Learning

**Stéphane Bressan**, National University of Singapore, Singapore

### Abstract

In 1687, Isaac Newton published his groundbreaking work, "Philosophiæ Naturalis Principia Mathematica." Newton's remarkable discoveries unveiled the laws of motion and the law of universal gravitation, propelling humanity's understanding of the physical world to new heights. In a letter to Robert Hooke in 1675, in response to an invitation to collaborate, Newton humbly remarked, "If I have seen further, it is by standing on the shoulders of giants." This metaphor swiftly became a powerful symbol of intellectual and scientific progress, signifying the idea that knowledge is built upon foundations laid by brilliant minds that came before us.

Fast-forwarding to the present, we find ourselves amidst a triumphant statistical machine learning revolution. In 2016, Google's AlphaGo, a deep reinforcement learning algorithm, astounded the world by outperforming a professional Go player. The following year, CheXNet, a deep convolutional neural network developed at Stanford University, surpassed radiologists in accurately detecting pneumonia from chest X-ray images. And in 2020, AlphaFold, a neural network model created by DeepMind, revolutionised protein structure prediction, surpassing other existing methods.

These advancements stand on the shoulders of giants. They owe their existence to the work of logicians, mathematicians, physicists, neurobiologists, computer scientists, and cyberneticists who have paved the way for the birth of modern machine learning models and algorithms. They also owe their existence to the work of material, electrical, electronics and other engineers, whose ingenuity has birthed the computer hardware and technology enabling such performance.

However, the remarkable ascent of machine learning is not solely reliant on these contributions. It thrives on the vast amounts of data permeating the global information infrastructure, enabling the construction of accurate representations of the world. What about knowledge?

In this context, we propose exploring and discussing how machine learning can both leverage and contribute to scientific knowledge. We explore how the training of a machine learning model can be informed by the fundamental principles of the very systems it seeks to comprehend and how it can create symbolic scientific knowledge. We explore applications in classical mechanics, fluid mechanics, quantum many-body systems, macroeconomics, chemistry, and astronomy. Along this journey, we cross the paths of such great minds as William Rowan Hamilton, Ernst Ising, Richard Feynman, and Johannes Kepler.

### Short Bio

Stéphane Bressan is Associate Professor in the Department of Computer Science of the School of Computing (SoC) of the National University of Singapore (NUS). Stéphane is Track Leader for Maritime Information Technologies at NUS Centre for Maritime Studies (CMS), Affiliate Professor at NUS Business Analytics Centre, Faculty Affiliate at NUS Institute of Data Science, and a member of the Image & Pervasive Access Lab (IPAL) (Singapore-France CNRS UMI 29255).

In 1990, Stéphane joined the European Computer-industry Research Centre (ECRC) of Bull, ICL, and Siemens in Munich (Germany). From 1996 to 1998, he was Research Associate at the Sloan School of Management of the Massachusetts Institute of Technology (MIT) (United States of America).

Stéphane's research interest is the integration, management and analysis of data from heterogeneous, disparate, and distributed sources. Stéphane has developed expertise in data- and physics-driven modelling, simulation, and optimisation with data mining and machine learning algorithms.

## Keynote Speakers



### Keynote Talk 2

**Data integration revitalized: from Data Warehouse through Data Lake to Data Mesh**  
**Robert Wrembel**, Poznan University of Technology; Artificial Intelligence and Cybersecurity Center (Poland)

#### Abstract

For years, data integration (DI) architectures evolved from those supporting virtual integration (mediated, federated), through physical integration (data warehouse), to those supporting both virtual and physical integration (data lake, lakehouse, polystore, data mesh/fabric). Regardless of its type, all of the developed DI architectures include an integration layer. This layer is implemented by a sophisticated software, which runs the so-called DI processes. The integration layer is responsible for ingesting data from various sources (typically heterogeneous and distributed) and for homogenizing data into formats suitable for future processing and analysis. Nowadays, in all business domains, large volumes of highly heterogeneous data are produced, e.g., medical systems, smart cities, precision/smart agriculture, which require further advancements in the data integration technologies. In this paper, I present my subjective view on still-to-be developed data integration techniques, namely: (1) novel agile/flexible integration techniques, (2) cost-based and ML-based execution optimization of DI processes, and (3) quality assurance techniques in complex multi-modal data systems.

#### Short Bio

Robert Wrembel (PhD, Dr. Habil.) is an associate professor in the Faculty of Computing and Telecommunications, at Poznan University of Technology (Poland). In 2008 he received a post-doctoral degree in computer science (habilitation), specializing in database systems and data warehouses. He has been a deputy dean of the Faculty of Computing and Management (2008-2012) and the Faculty of Computing (2012-2016). Since Jan 2023 he is a chair of the Data Processing Technologies group at Poznan University of Technology. Recently, as a leader, he realizes the mission of creating Artificial Intelligence and Cybersecurity Center in Poznań.

He was a consultant at software house Rodan Systems (2002-2003) and a lecturer at Oracle Poland (1998-2005). Currently he is an IT consultant in hospital Centrum Medyczne HCP. Within the last 10 years he has realized three R&D projects (two for Samsung Electronics and one for a company in the energy sector - Kogeneracja Zachód). Currently, as a team leader, he is realizing the fourth R&D project for the biggest Polish bank - PKO BP. He cooperates with IBM Software Lab Kraków in Poland. He has led at his University the Erasmus Mundus Joint Doctorate Program - Information Technologies for Business Intelligence - Doctoral College (2013-2020).

Robert visited numerous research and education centers, including: Universitat Politècnica de Catalunya - BarcelonaTech (Catalunya), Université Lyon 2 (France), Universidad de Costa Rica (Costa Rica), Klagenfurt University (Austria), Loyola University (USA), INRIA Paris-Rocquencourt (France), and Université Paris Dauphine (France). In 2012 he graduated from a 2-months innovation and entrepreneurial program at Stanford University. In 2013 he has done an internship in a BI company Targit (USA).

In 2010 he received the IBM Faculty Award for highly competitive research, in 2011 he was awarded the Medal of the Committee of National Education (from the Minister of National Education), in 2016 - the Silver Medal for Long-lasting Service (from the President of the Republic of Poland), in 2019 - IBM Shared University Research Award, and in 2019 - International Federation for Information Processing (IFIP) Service Award. He is a senior ACM member, a country representative in the IFIP Technical Committee TC 2 - Software: Theory and Practice, and a chair the of the IFIP Working Group 2.6 (Database)



## Keynote Speakers



### Keynote Talk 3

#### From an Interpretable Predictive Model to a Model Agnostic Explanation

*Osmar R. Zaiane, Amii Fellow & Canada CIFAR AI Chair, University of Alberta, Canada*

#### Abstract

Today, the limelight is on Deep Learning. With the massive success of deep learning, other machine learning paradigms have had to take the backstage. Yet other models, particularly rule-based learning methods, are more readable and explainable and can even be competitive when labelled data is not abundant, and therefore could be more suitable for some applications where transparency is a must. One such rule-based method is the less-known Associative Classifier. The power of associative classifiers is to determine patterns from the data and perform classification based on the features most indicative of prediction. Early approaches suffer from cumbersome thresholds requiring prior knowledge. We present a new associative classifier approach that is even more accurate while generating a smaller model. It can also be used in an explainable AI pipeline to explain inferences from other classifiers, irrespective of the predictive model used inside the black box.

#### Short Bio

Osmar Zaiane is a Professor in Computing Science at the University of Alberta, Canada, Fellow of the Alberta Machine Intelligence Institute (Amii), and Canada CIFAR AI Chair. Dr. Zaiane obtained his Ph.D. from Simon Fraser University, Canada, in 1999. He has published more than 400 papers in refereed international conferences and journals. He is an Associate Editor of many International Journals on data mining and data analytics and served as program chair and general chair for scores of international conferences in the field of knowledge discovery and data mining. Dr. Zaiane received numerous awards including the 2010 ACM SIGKDD Service Award from the ACM Special Interest Group on Data Mining, which runs the world's premier data science, big data, and data mining association and conference.

Dr. Zaiane focuses on pattern discovery and information extraction from large databases, also known as data mining. His work involves data mining from disparate heterogeneous data sources, such as on the Internet, as well as the analysis of complex information networks, also known as social network analysis. Specific research projects include the development of tools for data analytics such as Meerkat, a tool for analyzing changes over time in a network of entities. Other of Dr. Zaiane's research projects relate to data mining in health informatics and the development of tools for document categorization and decision support systems. He focuses on building applications that can improve decision-making in fields from business to medicine, allowing decisions to be based on data and data analysis. Through the application of machine learning and methods of knowledge discovery, he devises ways to personalize applications, automate processes and improve upon current data science practices.



# Conferences & Workshops Program

## Program Structure

Time	<b>Monday, 28 August 2023 – in person presentations</b>			
08:00 - 09:00	Registration and Morning Coffee @Ballroom Foyer			
09:00 - 12:00	Esplanade Ballroom Opening & Keynote Talks			
12:00 - 13:00	Lunch break @Makan Kitchen			
	Track 1	Track 2	Track 3	Track 4
	Esplanade Ballroom A	Esplanade Ballroom B	Ferringhi room	Makan Kitchen Function room
13:00 - 15:00	DEXA 1 Rule-Based Systems 1	DAWAK 1 Advanced Analytics & Pattern Discovery	DEXA 2 Neural Networks 1	EGOVIS 1 e-Government & Strategy
15:00 - 15:30	Coffee break @Ballroom Foyer			
15:30 - 17:00	DEXA 3 Data Modeling 1	DAWAK 2 Data Quality	DEXA 4 Database Design 1	EGOVIS 2 Strategy & Artificial Intelligence
17:30 - 19:30	Welcome Reception @Pool side / Ballroom's Garden			

Time	<b>Tuesday, 29 August 2023 – in person presentations</b>			
08:00 - 09:00	Registration @Ballroom Foyer			
	Track 1	Track 2	Track 3	Track 4
	Esplanade Ballroom A	Esplanade Ballroom B	Ferringhi room	Makan Kitchen Function room
09:00 - 10:30	DEXA 5 Data Modeling 2	DAWAK 3 Machine Learning 1	DEXA 6 Query Optimization	DEXA 7 Database Design 2
10:30 - 11:00	Coffee break @Ballroom Foyer			
11:00 - 12:30	DEXA 8 Rule-Based Systems 2	DAWAK 4 Machine Learning 2 Advanced Analytics and Pattern Discovery	DEXA 9 Knowledge Representation	DEXA 10 Deep Learning 1
12:30 - 13:30	Lunch break @Makan Kitchen Restaurant			
13:30 - 15:00	DEXA 11 Neural Networks 2	DAWAK 5 Data Management	DEXA 13 Deep Learning 2	DEXA 12 Natural Language Processing
15:00 - 15:30	Coffee break @Ballroom Foyer			
15:30 - 17:00	IWCFS	DAWAK 6 Deep Learning & Data Management	AISys (Online via Microsoft Teams)	DEXA 14 Database Design 3
19:30 - 22:30	Esplanade Ballroom Conference Dinner Norman Revell Award and Roland Wagner Award			

# Conferences & Workshops Program



<b>Wednesday, 30 August 2023</b> Online presentations in the Central Europe Summer Time-zone (CEST-Vienna)			
Time: CEST - Vienna	Virtual Track 1*)	Virtual Track 2**)	Time: Malaysian time zone
08:00 – 08:30	Preparation & check in		14:00 – 14:30
08:30 – 10:30	DEXA V.1	DAWAK V.1	14:30 – 16:30
10:30 – 10:45	Break		16:30 – 16:45
10:45 – 12:45	DEXA V.2	DEXA V.3	16:45 – 18:45
12:45 – 13:30	Break		18:45 – 19:30
13:30 – 15:00	EGOVIS-IWCFS-DEXA	DEXA V.4	19:30 – 21:00
15:00 – 15:15	Break		21:00 – 21:15
15:15 – 17:00	DEXA V.5	DAWAK V.2	21:15 – 23:00

**Zoom Links:**

**\*) Virtual Track 1**



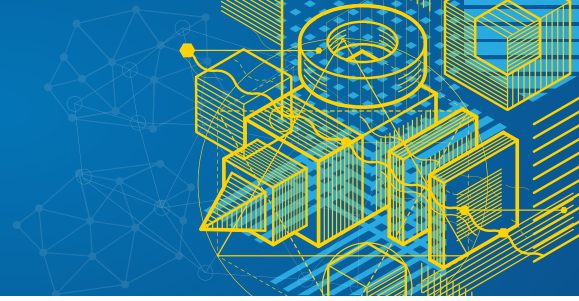
Link Zoom: [bit.ly/VirtualTrack-1](https://bit.ly/VirtualTrack-1)  
 Meeting-ID: 989 7631 3885  
 Password: 330686

**\*\*\*) Virtual Track 2**



Link Zoom: [bit.ly/VirtualTrack-2](https://bit.ly/VirtualTrack-2)  
 Meeting-ID: 991 9500 7091  
 Password: 494055

## Program Details



### Monday, 28 August 2023

08:00 – 09:00	Registration and Morning Coffee	<b>Ballroom Foyer</b>
09:00 – 12:00	<b>Opening Session</b> <b>Welcome Speech</b> <ul style="list-style-type: none"><li>• <b>Gabriele Kotsis</b>, Steering Committee &amp; Conference General Chair DEXA 2023</li></ul> <b>Keynote Talk 1</b> “ <b>Physics-informed Machine Learning</b> ” <ul style="list-style-type: none"><li>• <b>Stéphane Bressan</b>, National University of Singapore, Singapore</li></ul> <b>Keynote Talk 2</b> “ <b>Data integration revitalized: from Data Warehouse through Data Lake to Data Mesh</b> ” <ul style="list-style-type: none"><li>• <b>Robert Wrembel</b>, Poznan University of Technology; Artificial Intelligence and Cybersecurity Center (Poland)</li></ul> <b>Keynote Talk 3</b> “ <b>From an Interpretable Predictive Model to a Model Agnostic Explanation</b> ” <ul style="list-style-type: none"><li>• <b>Osmar R. Zaiane</b>, Amii Fellow &amp; Canada CIFAR AI Chair, University of Alberta, Canada</li></ul>	<b>Esplanade Ballroom</b>
12:00 – 13:00	<b>Lunch</b>	<b>Ballroom Foyer</b>
13:00 – 15:00	<b>Track 1: DEXA-1</b> <b>Rule-Based Systems 1</b> <ul style="list-style-type: none"><li>• <b>User Interactions-aware Knowledge Graphs for Recommender Systems</b> <i>Ru Wang, Bingbing Dong, Tianyang Li, Meng Wu, Chenyang Bu, Xindong Wu</i> China</li><li>• <b>How Does the System Perceive Me? -- A Transparent and Tunable Recommender System</b> <i>Mingman Xu, Qiong Chang, Jun Miyazaki</i> Japan</li><li>• <b>MERIHARI-Area Tour Planning by Considering Regional Characteristics</b> <i>Sotaro Moritake, Hidekazu Kasahara, Qiang Ma</i> Japan</li><li>• <b>Explaining Decisions of Black-box Models using BARBE</b> <i>Mohammad Motallebi, Md Tanvir Alam Anik, Osmar Zaiane</i> Canada</li><li>• <b>Efficient Video Captioning with Frame Similarity-based Filtering</b> <i>Elyas Rashno, Farhana Zulkernine</i> Canada</li><li>• <b>Trace-based Anomaly Detection with Contextual Sequential Invocations</b> <i>Qingfeng Du, Liang Zhao, Fulong Tian, Yongqi Han</i> China</li></ul>	<b>Esplanade Ballroom A</b>
13:00 – 15:00	<b>Track 2: DAWAK-1</b> <b>Advanced Analytics &amp; Pattern Discovery</b> <ul style="list-style-type: none"><li>• <b>Hypergraph Embedding Based on Random Walk with Adjusted Transition Probabilities</b> <i>Kazuya Nagasato, Satoshi Takabe, Kazuyuki Shudo</i> Japan</li><li>• <b>Contextual Shift Method (CSM)</b> <i>Gernot Schmitz, Daniel Wilmes, Alexander Gerharz, Daniel Horn, Emmanuel Müller</i> Germany</li></ul>	<b>Esplanade Ballroom B</b>

## Program Details

- **Discovery of Contrast Itemset with Statistical Background between Two Continuous Variables**

*Kaoru Shimada, Shogo Matsuno, Shota Saito*

*Japan*

- **DBGAN: A Data Balancing Generative Adversarial Network for Mobility Pattern Recognition**

*Ke Zhang, Hengchang Liu, Siobhan Clarke*

*Ireland, China*

- **Bitwise: Vertical Mining of Minimal Rare Patterns**

*Elieser Capillar, Chowdhury Abdul Mumin Ishmam, Carson Leung, Adam Pazdor, Prabhanshu Shrivastava, Ngoc Bao Chau Truong*

*Canada*

- **Inter-item time intervals in sequential patterns**

*Thomas Kastner, Hubert Cardot, Dominique H. Li*

*France*

13:00 – 15:00

### Track 3: DEXA-2 Neural Networks 1

Ferringhi Room

- **Multi-task Graph Neural Network for Optimizing the Structure Fairness**

*Jiahui Wang, Meng Li, Fangshu Chen, Xiankai Meng, Chengcheng Yu*

*China*

- **Few-Shot Multi-Label Aspect Category Detection Utilizing Prototypical Network with Sentence-Level Weighting and Label Augmentation**

*Zeyu Wang, Mizuho Iwaihara*

*Japan*

- **Toward Healthy Aging: Temporal Regression for Disability Prediction and Warning Decision-Making**

*Jianfei Zhang, Lifei Chen, Shengrui Wang*

*Canada, China*

- **A Label Embedding Method via Conditional Covariance Maximization for Multi-label Classification**

*Dan Li, Yunqian Li, Jun Li, Jianhua Xu*

*China*

- **Integrally Private Model Selection for Deep Neural Networks**

*Ayush K. Varshney, Vicenc Torra*

*Sweden*

- **Gaussian Process Component Mining with the Apriori Algorithm**

*Jan Hüwel, Christian Beecks*

*Germany*

13:00 – 15:00

### Track 4: EGOVIS-1 e-Government & Strategy

Makan Kitchen Function Room

- **NSFASonto: An Ontology for South African National Student Financial Aid Scheme Operations**

*Shaneer Luchman, Daniel Mundell, Akaylan Perumal, Jean Vincent Fonou-Dombeu*

*South Africa*

- **The Utilization of Public-Private Partnership Frameworks in the Management of eID Projects**

*Silvia Lips, Stina Mander, Dirk Draheim*

*Estonia*

- **OntoSBehaviour: An Ontology of Students' Behaviours at Institutions of Higher Learning**

*Micara Ramnanan, Jean Vincent Fonou Dombeu*



## Program Details

South Africa

- **Public Health Data and International Privacy Rules and Practices: A Case Study of Singapore**

*Ali Alibeigi, Abu Bakar Munir*

*Malaysia, Iran*

15:00 – 15:30

**Coffee Break**

**Ballroom Foyer**

15:30 – 17:00

**Track 1: DEXA-3  
Data Modeling 1**

**Esplanade Ballroom A**

- **Managing Semantic Evolutions in Semi-Structured Data**

*Pedro Nepomuceno, Kelly Braghetto*

*Brazil*

- **Effective and Efficient Heuristic Algorithms for Supporting Optimal Location of Hubs over Networks with Demand Uncertainty**

*Alfredo Cuzzocrea, Luigi Canadè, Giulia Fornari, Vittorio Gatto, Abderraouf Hafsaoui*

*Italy, France*

- **On tuning the sorted neighborhood method for record comparisons in a data deduplicaton pipeline: industrial experience report**

*Pawel Boinski, Witold Andrzejewski, Bartosz Bebel, Robert Wrembel*

*Poland*

- **Semantically Constitutive Entities in Knowledge Graphs**

*Chong Cher Chia, Maksim Tkachenko, Hady Lauw*

*Singapore*

15:30 – 17:00

**Track 2: DAWAK-2  
Data Quality**

**Esplanade Ballroom B**

- **State-Transition-Aware Anomaly Detection Under Concept Drifts**

*Bin Li, Emmanuel Müller*

*Germany*

- **Anomaly Detection in Financial Transactions via Graph-based Feature Aggregations**

*Hewen Wang, Renchi Yang, Jieming Shi*

*Singapore, Hong Kong*

- **Using Ontologies as Context for Data Warehouse Quality Assessment**

*Camila Sanz, Adriana Marotta*

*Uruguay*

- **EXOS: Explaining Outliers in Data Streams**

*Egawati Panjei, Le Gruenwald*

*USA*

15:30 – 17:00

**Track 3: DEXA-4  
Database Design 1**

**Ferringhi Room**

- **NoGar: A non-cooperative game for thread pinning in array databases**

*Simone Dominico, Marco A. Z. Alves, Eduardo Cunha de Almeida*

*Brazil*

- **LHKV: A Key-Value Data Collection Mechanism under Local Differential Privacy**

*Weihao Xue, Yingpeng Sang, Hui Tian*

*China, Australia*

## Program Details

- **Assessing the Effectiveness of Intrinsic Dimension Estimators for Uncovering the Phase Space Dimensionality of Dynamical Systems from State Observations - A Comparative Analysis**

*Félix Chavelli, Zi-Yu Khoo, Jonathan Sze Choong Low, Stephane Bressan*  
Singapore

- **Compliance and Data Lifecycle Management in Databases and Backups**

*Nick Scope, Alexander Rasin, Ben Lenard, James Wagner*  
USA

15:30 – 17:00

**Track 4: EGOVIS-2  
Strategy & Artificial Intelligence**

**Makan Kitchen Function Room**

- **Sentiment Analysis Application in E-Commerce Current Models and Future Directions**

*Huang Huang, Adeleh Asemi, Mumtaz Begum Mustafa*  
Malaysia

- **Evolving Justice Sector: An Innovative Proposal for Introducing AI-based Techniques in Court Offices**

*Flora Amato, Simona Fioretto, Eugenio Forgillo, Elio Masciari, Nicola Mazzocca, Sabrina Merola, Enea Vincenzo Napolitano*  
Italy

- **Hybrid AI Analysis of the drug micro-trafficking in Italy**

*Salvatore Sapienza*  
Italy

- **Exploring the Potential of AI & MDL for Enhancing E-Government Services: A review paper**

*Asefeh Asemi, Adeleh Asemi, Andrea Kő*  
Malaysia, Hungary

17.30 – 19.30

**Welcome Reception @Pool side/Ballroom's Garden**

### Tuesday, 29 August 2023

08:00 – 09:00

**Registration**

**Ballroom Foyer**

09:00 – 10:30

**Track 1: DEXA-5  
Data Modeling 2**

**Esplanade Ballroom A**

- **DMIS: Dual Model Index Structure for Enhanced Performance on Complexly Distributed Datasets**

*Lanzhong Liu, Xujian Zhao, Yin Long*  
China

- **Streaming Data Analytics for Feature Importance Measures in Concept Drift Detection and Adaptation**

*Alizadeh Mansouri, Abbas Javadtalab, Nematollaah Shiri*  
Canada

- **Co-location pattern mining under the spatial structure constraint**

*Rodrigue Govan, Nazha Selmaoui-Folcher, Aristotelis Giannakos, Philippe Fournier-Viger*  
New Caledonia, France, China

## Program Details

- 09:00 – 10:30 **Track 2: DAWAK-3** **Esplanade Ballroom B**  
**Machine Learning 1**
- **DAT@Z21: A Comprehensive Multimodal Dataset for Rumor Classification in Microblogs**  
*Abderrazek Azri, Cécile Favre, Nouria Harbi, Jerome Darmont, Camille Noûs*  
France
  - **Dealing With Data Bias in Classification: Can Generated Data Ensure Representation and Fairness?**  
*Manh Khoi Duong, Stefan Conrad*  
Germany
  - **Random Hypergraph Model Preserving Two-mode Clustering Coefficient**  
*Rikuya Miyashita, Kazuki Nakajima, Mei Fukuda, Kazuyuki Shudo*  
Japan
  - **Improving Stochastic Gradient Descent Initializing with Data Summarization**  
*Robin Varghese, Carlos Ordonez*  
USA
- 09:00 – 10:30 **Track 3: DEXA-6** **Ferringhi Room**  
**Query Optimization**
- **Parallel Pattern Enumeration in Large Graphs**  
*Abir Farouzi, Xiantian Zhou, Ladjel Bellatreche, Mimoun Malki, Carlos Ordonez*  
France, USA, Algeria
  - **S2CTrans: Building a Bridge from SPARQL to Cypher**  
*Zihao Zhao, Xiaodong Ge, Zhihong Shen, Chuan Hu, Huajin Wang*  
China
  - **Rewriting Graph-DB Queries to Enforce Attribute-based Access Control**  
*Daniel Hofer, Aya Mohamed, Dagmar Auer, Stefan Nadschläger, Josef Küng*  
Austria
  - **A Polystore Querying System applied to heterogeneous and horizontally distributed data**  
*Lea El Ahdab, Olivier Teste, Imen Megdiche, André Péninou*  
France
- 09:00 – 10:30 **Track 4: DEXA-7** **Makan Kitchen Function Room**  
**Database Design 2**
- **A Real-time Parallel Information Processing Method for Signal Sorting**  
*Xiaofang Liu, Chaoyang Wang, Xing Fan*  
China
  - **Learning Optimal Tree-based Index Placement for Autonomous Database**  
*Xiaoyue Feng, Tianzhe Jiao, Chaopeng Guo, Jie Song*  
China
  - **Social Links Enhanced Microblog Sentiment Analysis: Integrating Link Prediction and Sentiment Connection Weights**  
*Xiaomei Zou, Taihao Li, Jing Yang*  
China
  - **Discovering Diverse Information Considering User Acceptability**  
*Yuki Ito, Qiang Ma*  
Japan
- 10:30 – 11:00 **Coffee Break**

## Program Details

- 11:00 – 12:30 **Track 1: DEXA-8** **Esplanade Ballroom A**  
**Rule-Based Systems 2**
- **Fusing Fine-grained Information of Sequential News for Personalized News Recommendation**  
*Jin-cheng Zhang, Azlan Mohd Zain, Kai-Qing Zhou, Xi Chen, Ren-Min Zhang*  
Malaysia, China
  - **A Finite- Domain Constraint-based Approach on the Stockyard Planning Problem**  
*Sven Löffler, Ilja Becker, Petra Hofstedt*  
Germany
  - **Data Analytics Framework for Smart Waste Management Optimisation: A Key to Sustainable Future for Councils and Communities**  
*Sabbir Ahmed, Sameera Mubarak, Santoso Wibowo, Jia Tina Du*  
Australia
  - **RD-Classifer: Reduced Dimensionality Classifier for Alzheimer 's Diagnosis Support System**  
*Soualihou Ngnamsie Njimbouom, Gelany Aly Abdelkader, Candra Zonyfar, Hyun Lee, Jeong-Dong Kim*  
South Korea
- 11:00 – 12:30 **Track 2: DAWAK-4** **Esplanade Ballroom B**  
**Machine Learning 2 & Advanced Analytics and Pattern Discovery**
- **Feature analysis of Regional Behavioral Facilitation Information based on Source Location and Target People in Disaster**  
*Kosuke Wakasugi, Futo Yamamoto, Yu Suzuki, Akiyo Nadamoto*  
Japan
  - **Exploring Dialog Act Recognition in Open Domain Conversational Agents**  
*Maliha Sultana, Osmar Zaiane*  
Canada
  - **UniCausal: Unified Benchmark and Repository for Causal Text Mining**  
*Fiona Anting Tan, Xinyu Zuo, See-Kiong Ng*  
Singapore, China
  - **Fair-DSP: Fair Dynamic Survival Prediction on Longitudinal Electronic Health Record**  
*Xin Huang, Xiangyang Meng, Ni Zhao, Wenbin Zhang, Jianwu Wang*  
USA
- 11:00 – 12:30 **Track 3: DEXA-9** **Ferringhi Room**  
**Knowledge Representation**
- **Tour Route Generation Considering Spot Congestion**  
*Takeyuki Maekawa, Hidekazu Kasahara, Qiang Ma*  
Japan
  - **Feature Selection for Aero-Engine Fault Detection**  
*Amadi Gabriel Udu, Andrea Lecchini-Visintini, Hongbiao Dong*  
UK, Nigeria
  - **Tracking Clusters of Links in Dynamic Social Networks**  
*Erick Stattner*  
France
  - **Mind In Action: Cognitive Assessment using Action Recognition**  
*Sayda Elmi, Sai Karthik Navuluru, Morris Bell*  
USA



## Program Details

- 11:00 – 12:30 **Track 4: DEXA-10** **Makan Kitchen Function Room**  
**Deep Learning 1**
- **An Efficient Embedding Framework for Uncertain Attribute Graph**  
*Ting Jiang, Ting Yu, Xueting Qiao, Ji Zhang*  
China, Australia
  - **Multi-core Adaptive Merging of the Secondary Index for LSM-based Stores**  
*Wojciech Macyna, Michal Kukowski, Michal Zwarzko*  
Poland
  - **CAGAIN: Column Attention Generative Adversarial Imputation Networks**  
*Jun Kawagoshi, Yuyang Dong, Takuma Nozawa, Chuan Xiao*  
Japan
  - **Except-Condition Generative Adversarial Network for Generating Trajectory Data**  
*Yeji Song, Jihwan Shin, Jinhyun Ahn, Taewhi Lee, Dong-Hyuk Im*  
South Korea
- 12:30 – 13:30 **Lunch**
- 13:30 – 15:00 **Track 1: DEXA-11** **Esplanade Ballroom A**  
**Neural Networks 2**
- **Learnable Filter Components for Social Recommendation**  
*XianKun Zhang and WenJie Huang*  
China
  - **A Machine-Learning Framework for Supporting Content Recommendation via User Feedback Data and Content Profiles in Content Managements Systems**  
*Debashish Roy, Alfredo Cuzzocrea, ChenDing, Islam Belmerabet*  
Canada, Italy, France
  - **Celestial Machine Learning from Data to Mars and Beyond with AI Feynman**  
*Zi-Yu Khoo, Abel Yang, Jonathan Sze Choong Low, Stéphane Bressan*  
Singapore
  - **Efficient Machine Learning-Based Prediction of CYP450 Inhibition**  
*Gelany Aly Abdelkader, Soualihou Ngnamsie Njimbouom, Prince Gidiglo Delator, Jeong-Dong Kim, Tae-Jin Oh*  
South Korea
- 13:30 – 15:00 **Track 2: DAWAK-5** **Esplanade Ballroom B**  
**Data Management**
- **Unified views for querying heterogeneous multi-model polystores**  
*Lea El Ahdab, André Péninou, Olivier Teste, Imen Megdiche*  
France
  - **RODD: Robust Outlier Detection in Data Cubes**  
*Lara Kuhlmann, Daniel Wilmes, Emmanuel Müller, Markus Pauly, Daniel Horn*  
Germany
  - **Data-driven and On-Demand Conceptual Modeling**  
*Damianos Chatziantoniou, Verena Kantere*  
Greece, Canada
  - **FLOWER: Viewing Data Flow in ER Diagrams**  
*Elijah Mitchell, Nabila Berkani, Ladjel Bellatreche, Carlos Ordonez*  
USA, Algeria, France

## Program Details

- 13:30 – 15:00 **Track 3: DEXA-13** **Ferringhi Room**  
**Deep Learning 2**
- **Next POIs Prediction for Group Recommendations: Influence-based Deep Learning Model**  
*Sayda Elmi, Kian Lee Tan*  
*USA, Singapore*
  - **NExtGCN: Modeling Node Importance of Graph Convolution Network by Neighbor Excitation for Recommendation**  
*Jingxue Zhang, Ning Wu, Changchun Yang*  
*China*
  - **Dual Congestion-aware Route Planning for Tourists by Multi-agent Reinforcement Learning**  
*Kong Yuntao, Peng Cheng, Nguyen Minh Le, Ma Qiang*  
*Japan*
  - **Subspace Clustering Technique Using Multi-Objective Functions for Multi-class Categorical Data**  
*Rahmah Brnawy, Nematollaah Shiri*  
*Canada*
- 13:30 – 15:00 **Track 4: DEXA-12** **Makan Kitchen Function Room**  
**Natural Language Processing**
- **Multi-Feature and Multi-Channel GCNs for Aspect Based Sentiment Analysis**  
*WenLong Xi, Xiaoxi Huang, Fumiyo Fukumoto, Yoshimi Suzuki*  
*China, Japan*
  - **Towards Ensemble-based Imbalanced Text Classification using Metric Learning**  
*Takahiro Komamizu*  
*Japan*
  - **Target and Precursor named entities recognition from scientific texts of high-temperature steel using deep neural network**  
*M. Saef Ullah Miah, Junaida Sulaiman, Talha Bin Sarwar, Imam Ul Ferdous, Saima Sharleen Islam, Md. Samiul Haque*  
*Bangladesh, Malaysia, Italy*
  - **Enabling PII Discovery in Textual Data via Outlier Detection**  
*Md Rakibul Islam, Anne Kayem, Christoph Meinel*  
*Germany*
- 15:00 – 15:30 **Coffee Break**
- 15:30 – 17:00 **Track 1: IWCFS** **Esplanade Ballroom A**
- **A Context Ontology-based Model to Mitigate Root Causes of Uncertainty in Cyber-Physical Systems**  
*Mah Noor Asmat, Saif Ur Rehman Khan, Atif Mashkoo, Irum Inayat*  
*Pakistan, Austria*
  - **Towards Increasing Safety in Collaborative CPS Environments**  
*Marco Stadler, Michael Riegler, Johannes Sametinger*  
*Austria*
  - **An Intermediate Representation for Rewriting Cypher Queries**  
*Daniel Hofer, Aya Mohamed, Stefan Nadschläger, Dagmar Auer*  
*Austria*
  - **An Effective Feature Selection for Diabetes Prediction**  
*In-ae Kang, Soualihou Ngnamsie Njimbouom, Jeong-Dong Kim*  
*South Korea*

## Program Details

- **Architecture for Self-protective Medical Cyber-Physical Systems**

*Michael Riegler, Johannes Sametinger, Jerzy W. Rozenblit  
Austria, USA*

15:30 – 17:00

**Track 2: DAWAK-6**

**Esplanade Ballroom B**

**Deep Learning & Data Management**

- **Accounting for Imputation Uncertainty During Neural Network Training**

*Thomas Ranvier, Haytham Elghazel, Emmanuel Coquery, Khalid Benabdeslem  
France*

- **DRUM: A real time Detector for Regime shifts in data streams via an Unsupervised and Multivariate framework**

*Adnan Bashir, Trilce Estrada  
USA*

- **Supporting Big Healthcare Data Management and Analytics: The Cloud-Based QFLS Framework**

*Alfredo Cuzzocrea, Selim Soufargi  
Italy, France*

15:30 – 17:00

**Track 3: AISys (Online via Microsoft Teams)**

**Ferringhi Room**

- **DSD: The Data Source Description Vocabulary**

*Lisa Ehrlinger, Johannes Schrott, Wolfram Wöß  
Austria*

- **Analyzing the Innovative Potential of Texts Generated by Large Language Models: An Empirical Evaluation**

*Oliver Krauss, Michaela Jungwirth, Marius Elflein, Simone Sandler, Christian Altendorfer, Andreas Stoeckl  
Austria*

- **LocBERT: Improving Social Media User Location Prediction using Fine-Tuned BERT**

*Asif Khan, Huaping Zhang, Nada Boudjellal, Arshad Ahmad, Maqbool Khan  
China, Algeria, Pakistan*

- **Measuring Overhead Costs of Federated Learning Systems by Eavesdropping**

*Rainer Meindl, Bernhard A. Moser  
Austria*

15:30 – 17:00

**Track 4: DEXA-14  
Database Design 3**

**Makan Kitchen Function Room**

- **Confidential Truth Finding with Multi-Party Computation**

*Angelo Saadeh, Pierre Senellart, Stephane Bressan  
France, Singapore*

- **A Key-Value Based Approach to Scalable Graph Database**

*Zihao Zhao, Chuan Hu, Zhihong Shen, Along Mao, Hao Ren  
China*

- **Bitwise Algorithms to Compute the Transitive Closure of Graphs in Python**

*Xiantian Zhou, Abir Farouzi, Ladjel Bellatreche, Carlos Ordonez  
USA, France*

- **Discovering Top-K Partial Periodic Patterns in Big Temporal Databases**

*Palla Likhitha, Rage Uday Kiran  
India, Japan*

19:30 – 22:30

**Conference Dinner and Awards Presentation @Esplanade Ballroom**

## Program Details

Wednesday, 30 August 2023

All Online Paper Presentations in the Central European Summer Time-zone (CEST/Vienna)

08:00 – 08:30 **Preparation & Check in**

08:30 – 10:30 **Track 1: DEXA V.1**

• **Scalable Summarization for Knowledge Graphs with Controlled Utility Loss**

*Yi Wang, Ying Wang, Qia Wang*  
China

• **Commonsense-aware Attentive Modeling for Humor Recognition**

*Yuta Sasaki, Jianwei Zhang, Yuhki Shiraishi*  
Japan

• **PrivSketch: A Private Sketch-based Frequency Estimation Protocol for Data Streams**

*Ying Li, Xiaodong Lee, Botao Peng, Themis Palpanas, Jingan Xue*  
China, France

• **KBQA: Accelerate Fuzzy Path Query on Knowledge Graph**

*Li Zeng, Qiheng You, Jincheng Lu, Shizheng Liu, Weijian Sun, Rongqian Zhao, Xin Chen*  
China

• **A study on Vulnerability Code Labeling Method in Open-Source C Programs**

*Yaning Zheng, Dongxia Wang, Huayang Cao, Cheng Qian, Xiaohui Kuang, Honglin Zhuang*  
China

08:30 – 10:30 **Track 2: DAWAK V.1**

• **Supervised Hybrid Model for Rumor Classification: A Comparative Study of Machine and Deep Learning Approaches**

*Mehzabin Sadat Aothoi, Samin Ahsan, Najeefa Nikhat Choudhury, Annajiat Alim Rasel*  
Bangladesh

• **A Fine-Grained Structural Partitioning Approach to Graph Compression**

*François Pitois, Hamida Seba, Mohammed Haddad*  
France

• **HKS: Efficient Data Partitioning for Stateful Streaming**

*Adeel Aslam, Giovanni Simonini, Luca Gagliardelli, Angelo Mozzillo, Sonia Bergamaschi*  
Italy

• **Preventing technical errors in data lake analyses with type theory**

*Alexis Guyot, Eric Leclercq, Annabelle Gillet, Nadine Cullot*  
France

• **The Synergies of Context and Data Aging in Recommendations**

*Anna Dalla Vecchia, Niccolò Marastoni, Barbara Oliboni, Elisa Quintarelli*  
Italy

• **A Non-overlapping Community Detection Approach based on  $\alpha$ -Structural Similarity**

*Motaz Ben Hassine, Saïd Jabbour, Mourad Kmimech, Badrane Raddaoui, Mohamed Graiet*  
France

10:30 – 10:45 **Break**



## Program Details

10:45 – 12:45 **Track 1: DEXA V.2**

• **Hierarchy-aware Bilateral-Branch Network for Imbalanced Hierarchical Text Classification**

*Jiangjiang Zhao, Jiyi Li, Fumiyo Fukumoto*  
China, Japan

• **Fine-tuning Pre-Trained Model for Consumer Fraud Detection from Consumer Reviews**

*Xingli Tang, Keqi Li, Liting Huang, Hui Zhou, Chunyang Ye*  
China

• **Deep Multi-Interaction Hidden Interest Evolution Network for Click-through Rate Prediction**

*Zhongxing Zhang, Qingbo Hao, Yingyuan Xiao, Wenguang Zheng*  
China

• **Temporal Semantic Attention Network for Aspect-Based Sentiment Analysis**

*Bin Yang, Xinyang Tong, Ying Xing, Qi Shen, Huiying Zhao, Zhipu Xie*  
China

• **Knowledge Injection for Aspect-Based Sentiment Classification**

*Romany Dekker, Danae Gielisse, Chaya Jaggan, Sander Meijer, Flavius Frasincaar*  
Netherlands

10:45 – 12:45 **Track 2: DEXA V.3**

• **Enhancing Online Index Tuning with a Learned Tuning Diagnostic**

*Haitian Hang, Jianling Sun*  
China

• **Double-layer Attention for Long Sequence Time-Series Forecasting**

*Jiasheng Ma, Xiaoye Wang, Yingyuan Xiao*  
China

• **CF-SAFF: Collaborative Filtering based on Self-Attention Mechanism and Feature Fusion**

*Weixin Kong, Xiaoye Wang, Yingyuan Xiao*  
China

• **MIRS: [MASK] Insertion based Retrieval Stabilizer for Query Variations**

*Junping Liu, Mingkang Gong, Xinrong Hu, Jie Yang, Yi Guo*  
China, Australia

• **Investigating Lakehouse-Backbones for Vehicle Sensor Data**

*Christopher Vox, David Broneske, Jan Piewek, Janusz Feigel, Gunter Saake*  
Germany

12:45 – 13:30 **Break**

13:30 – 15:00 **Track 1: EGOVIS & IWCFS**

• **Ontology-Driven Parliamentary Analytics: Analysing Political Debates on COVID-19 Impact in Canada**

*Sabrina Azzi and Stéphane Gagnon*  
UK, Canada

• **An Approach for Safe and Secure Software Protection Supported by Symbolic Execution**

*Daniel Dorfmeister, Flavio Ferrarotti, Bernhard Fischer, Evelyn Haslinger, Rudolf Ramler, Markus Zimmermann*  
Austria

• **Adding result diversification to kNN-based joins in a Map-Reduce framework**

*Vinicius Souza, Luiz Carvalho, Daniel de Oliveira, Marcos Bedo, Lucio Santos*  
Brazil

13:30 – 15:00 **Track 2: DEXA V.4**

• **Dexteris: Data Exploration and Transformation with a Guided Query Builder Approach**

## Program Details

*Sébastien Ferré*

*France*

- **A Neighborhood Encoding for Subgraph Queries in Graph Databases**

*Chems Eddine Nabti, Thamer Mecharnia, Salah Eddine Boukhetta, Karima Amrouche, Hamida Seba, France*

- **Financial Argument Quality Assessment in Earnings Conference Calls**

*Alaa Alhamzeh  
Germany*

- **Towards a Workload Mapping Model for Tuning Backing Services in Cloud Systems**

*Gaurav Kumar, Kshira Sagar Sahoo, and Monowar Bhuyan  
Sweden*

15:00 – 15:15 **Break**

15:15 – 17:00 **Track 1: DEXA V.5**

- **A Knowledge-based Approach to Business Process Analysis: from Informal to Formal**

*Antonio De Nicola, Anna Formica, Ida Mele, Michele Missikoff, Francesco Taglino  
Italy*

- **Evaluating Prompt-based Question Answering for Object Prediction in the Open Research Knowledge Graph**

*Jennifer D'Souza, Moussab Hrou, Sören Auer  
Germany*

- **Variables are a Curse in Software Vulnerability Prediction**

*Jinghua Groppe, Sven Groppe, Ralf Möller  
Germany*

- **Interpreting Deep Text Quantification Models**

*YunQi Bang, Mohammed Khaleel, Wallapak Tavanapong  
USA*

- **An approach for efficient processing of machine operational data**

*Ben Lenard, Eric Pershey, Zachary Nault, Alexander Rasin  
USA*

15:15 – 17:00 **Track 2: DAWAK V.2**

- **Attention-based Counterfactual Explanation for Multivariate Time Series**

*Peiyu Li, Omar Bahri, Soukaina Filali Boubrahimi, Shah Muhammad Hamdi  
USA*

- **Motif Alignment for Time Series Data Augmentation**

*Omar Bahri, Peiyu Li, Soukaina Filali Boubrahimi, Shah Muhammad Hamdi  
USA*

- **Hierarchical Graph Neural Network with Cross-Attention for Cross-Device User Matching**

*Ali Taghibakhshi, Mingyuan Ma, Ashwath Aithal, Onur Yilmaz, Haggai Maron, Matthew West  
USA*

- **Beyond Traditional Flare Forecasting: A Data-driven Labeling Approach for High-fidelity Predictions**

*Jinsu Hong, Anli Ji, Chetraj Pandey, Berkay Aydin  
USA*

- **Utility-Oriented Gradual Itemsets Mining Using High Utility Itemsets Mining**

*Audrey Fongue, Jerry Lonlac, Norbert Tsopze  
Cameroon*

**End**



## Conference Venue

DEXA 2023 conferences and workshops take place at DoubleTree Resort by Hilton Penang

All the meeting room locations are located on the Lower Ground floor of the resort.

- Esplanade Ballroom (A&B) : Plenary session, Track 1 and Track 2
- Ferringhi Room : Track 3
- Makan Kitchen Function room : Track 4
- Makan Kitchen Restaurant : Lunch
- Registration Desk : Foyer of the meeting rooms

The Resort Address: 56, Jalan Low Yat, Puncak Ria, 11100 Batu Ferringhi, Pulau Pinang, Malaysia

Tel : +60 48928000

email : DoubleTreePenang\_Info@hilton.com







## Social Events

### Welcome Reception

*Monday, 28 August 2023, 17:30 – 19:30 pm at the Pool side/ Ballroom's Garden*

Just after the last session of the first day, Monday, 28 August 2023, all DEXA 2023 participants are invited to a welcome reception at the Pool side Double Tree Resort which located next to the garden just outside the Esplanade Ballroom. All participants can chill out during the sunset while enjoying the rest of the evening with drinks and snacks which will be served from 17:30 to 19:30 pm.



### Conference Dinner

*Tuesday, 29 August 2023, 19:30 – 22:30, at the Esplanade Ballroom, Double Three Resort Hotel*

On the second day DEXA 2023 invites all participants to a Conference Dinner that will be held at the Esplanade Ballroom. A short cultural performance to show-case the unique culture of Penang presented by the Penang Convention & Exhibition Board (PCEB). The best papers awards will also be presented to the selected papers. The selected best papers will receive the Norman Revell Award and the Roland Wagner Award.





## General Information



### Registration Desk

The Registration Desk is located at the Ballroom Foyer.

Opening hours:

Mon, 28 Aug 2023; 08.00 – 16.00

Tue, 29 Aug 2023; 08.00 – 16.00



### Coffee Breaks & Lunches

Coffee Break will be served at the Ballroom Foyer during the conference days and Lunch will take place at the Makan Kitchen Restaurant.

Lunch Voucher will be given to participants (when entitled to) during the registration.

Please always wear/bring your ID badge throughout the conference programs, coffee breaks and lunches. Don't forget to bring Lunch Voucher as Lunch admission.



### Smoking Policy

Smoking only permitted in the restricted area and outside the building. No smoking inside the buildings.



### Mobile Phone Courtesy

All mobile phones and other equipment with audible alarms should be turned off in all sessions as a courtesy to the presenters and to the other attendees.



### Presentation Equipment

The conference organizer will provide a standard presentation equipment i.e., computer, projector and flipchart. All presenters are recommended to bring their personal laptop or USB flash for presentation including any adaptors required for the laptop, otherwise please inform the organizer earlier before presentation schedule.



### WLAN Access

Free WiFi is available in the entire meeting rooms, please contact registration desk for WiFi connection.



### Electricity Supply

Electricity in Malaysia is supplied at 220-240 V. Please make sure to bring your own travel adapter if needed. We cannot guarantee the availability of the appropriate adaptor or transformer.

## General Information



### Public transport in Penang

**Bus** is the main public transportation within Penang city. Rapid Penang is the main public bus service that covers an extensive area both on the island and mainland (Seberang Prai). Simply ask around or look out for signboards to find out which bus route serves you best. Upon boarding the Rapid Penang bus, inform the driver of your destination, pay the amount required and receive a ticket for your trip. Remember to prepare exact change as no change will be given back as all buses do not carry change for safety reasons.

Fares are based on distance travelled

Check on their website for bus route & more information :

**(<https://myrapid.com.my/bus-train/rapid-penang/rapid-pg-bus/>)**

Other alternative transportation means are Taxi and E-hailing services/online taxi.

**Taxis** are easily available around the island. Be sure to agree on a price before boarding the taxi. Start by asking how much it is to get to your destination; you can negotiate on the prices quoted if you feel that they are too high.

**Grab** is the most popular **e-hailing services** in Panang and entire Malaysia. Simply download the app (Grab) to start booking your trips. Payment is either by cash or credit/debit card.

### Rent-A-Bike/Bicycle

Bicycles and motorbikes also offer inexpensive and fun ways to explore the island. There is a shared bike system in the city and its surroundings and other bike rentals are also available along the hotel stretch of Batu Ferringhi.

- La Belle Vespa Rental, Penang: Tel: +6016 416 0717