

PROGRAM

32nd DEXA2021 Conferences & Workshops
27 – 30 September 2021

Day 1, Monday 27 Sep 2021

*All times are Central Europe time (Vienna, which is UTC+2)
Proceedings can be accessed at (http://www.dexa.org/free_proceedings)*

14:00 - 14:30

O P E N I N G

- *Gabriele Kotsis, A Min Tjoa, Robert Wille*

Zoom Link: <https://jku.zoom.us/j/95211943907?pwd=a0VhOFFxdWhPOGNJLOVQenIsTUo0Zz09>

14:30 - 15:30

Keynotes 1

Zoom Link: <https://jku.zoom.us/j/95211943907?pwd=a0VhOFFxdWhPOGNJLOVQenIsTUo0Zz09>

Privacy in the Era of Big Data, Machine Learning, IoT, and 5G

Elisa Bertino, Purdue University, USA

Moderator: **Gabriele Kotsis**

Papers Presentation

15:45 - 17:45

Track 1

Zoom Link:

<https://jku.zoom.us/j/95825096776?pwd=Z083SUFWM1VNYmhKd3JBZ0Y5UG5odz09>

Session: **1.1_DEXA - Big Data**

Session Chair: **Sven Groppe**

- **Subgroup Discovery with Consecutive Erosion on Discontinuous Intervals**
Reynald Eugenie, Erick Stattner
Guadeloupe, France
- **Fast SQL/Row Pattern Recognition Query Processing using Parallel Primitives on GPUs**
Tsubasa Ohara, Qiong Chang, Jun Miyazaki
Japan
- **Scalable Tabular Metadata Location and Classification in Large-scale Structured Datasets**
Kazi Islam, Michael Gubanov
USA
- **Reference Architecture for Running Large Scale Data Integration Experiments**
Michal Bodziony, Robert Wrembel
Poland
- **Unified and View-specific Multiple Kernel K-means Clustering**
Yujing Zhang, Siwei Wang, En Zhu
China

15:45 - 17:45

Track 2Zoom Link: <https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VlF2cDRtNExGZGF0dz09>Session: **1.2_DAWAK - Performance**Session Chair: **Matteo Golfarelli****• OPENING***Robert Wrembel & Matteo Golfarelli***• Bounding Box Representation of Co-Location Instances for L-infinity Induced Distance Measure***Witold Andrzejewski and Pawel Boinski
Poland***• Benchmarking Data Lakes Featuring Structured and Unstructured Data with DLBench***Pegdwendé N. Sawadogo, Jérôme Darmont
France***• Towards an Adaptive Multidimensional Partitioning for Accelerating Spark SQL***Soumia Benkrid, Ladjel Bellatreche, Yacine Mestoui, and Carlos Ordonez
Algeria, France, USA***• Selecting Subexpressions to Materialize for Dynamic Large-scale Workloads***Mustapha Chaba Mouna, Ladjel Bellatreche, and Narhimene Boust
Algeria, France***• Cognitive Visual Commonsense Reasoning Using Dynamic Working Memory***Xuejiao Tang, Xin Huang, Wenbin Zhang, Travers B. Child, Qiong Hu, Zhen Liu, Ji Zhang
Germany***• Health Analytics on COVID-19 Data with Few-Shot Learning***Carson K. Leung, Daryl L.X. Fung, Calvin S.H. Hoi
Canada*

15:45 - 17:45

Track 3

Zoom Link:

<https://jku.zoom.us/j/92039279301?pwd=QVplVEVVsZmRUd1d0SFFDakNaTXZTQT09>Session: **1.3_IWCFS**Session Chair: **Atif Mashkooor & Johannes Sametinger**

- **Mode Switching for Secure Web Applications - A Juice Shop Case Scenario**
Michael Riegler, Johannes Sametinger
Austria
- **A Conceptual Model for the Mitigation of Root Causes of Uncertainty in Cyber-Physical Systems**
Mah Noor Asmat, Saif Ur Rehman Khan, Atif Mashkooor
Pakistan, Austria
- **Security-based Safety Hazard Analysis using FMEA: A DAM Case Study**
Irum Inayat, Muhammad Farooq, Zubaria Inayat, Muhammad Abbas
Pakistan, Sweden
- **Privacy Preserving Machine Learning for Malicious URL Detection from a Security Perspective: First findings of a Systematic Literature Review**
Imtiyazuddin Shaik, Nitesh Emmadi, Harshal Tupsamudre, Harika Nar-umanchi, and Rajan Mindigal
Alasingara Bhattachar
India
- **Remote attestation of bare-metal microprocessor software: a formally verified security monitor**
Jonathan Certes, Benoît Morgan
France
- **Provenance and Privacy in ProSA: A Guided Interview on Privacy-Aware Provenance**
Tanja Auge, Nic Scharlau, Andreas Heuer
Germany

15:45 - 17:45

Track 4

Zoom Link:

<https://jku.zoom.us/j/93281299781?pwd=N2RWVGZMMmNIYnFqQmNoaUtyelRXZz09>Session: **1.4_MLKgraphs**Session Chair: **Anna Fensel & Jorge Martinez-Gil****Placeholder constraint evaluation in simulation graphs**

Stefan Nadschläger, Markus Jäger, Daniel Hofer, Josef Küng
Austria

Walk Extraction Strategies for Node Embeddings with RDF2Vec in Knowledge Graphs

Bram Steenwinckel, Gilles Vandewiele, Pieter Bonte, Michael Weyns, Heiko Paulheim, Petar Ristoski, Filip De Turck, Femke Ongenaë
Austria

Bridging Semantic Web and Machine Learning: First Results of a Systematic Mapping Study

Laura Waltersdorfer, Anna Breit, Fajar J. Ekaputra, Marta Sabou
Austria

On the Quality of Compositional Prediction for Prospective Analytics on Graphs

Lyan Gauthier, David Gross-Amblard, Jean-Marc Jézéquel
France

Semantic Influence Score: Tracing Beautiful Minds through Knowledge diffusion and Derivative Works

Pragnya Sridhar, Deepika Karanji, Gambhire Swati Sampatrao, Sravan Danda, and Snehanthu Saha
India

PROGRAM

32nd DEXA2021 Conferences & Workshops
27 – 30 September 2021

Day 2, Tuesday, 28 Sep 2021

All times are Central Europe time (Vienna, which is UTC+2)
Proceedings can be accessed at (http://www.dexa.org/free_proceedings)

Papers Presentation

09:00 - 11:00

Track 1

Zoom Link:

<https://jku.zoom.us/j/95825096776?pwd=Z083SUFWM1VNYmhKd3JBZ0Y5UG5odz09>

Session: **2.1_DEXA - Data Analysis and Data Modeling 1**

Session Chair: **Hamidah Ibrahim**

- **Augmented Lineage: Traceability of Data Analysis Including Complex UDFs**
Masaya Yamada, Hiroyuki Kitagawa, Toshiyuki Amagasa, Akiyoshi Matono
Japan
- **Neural Ordinary Differential Equations for the Regression of Macroeconomics Data under the Green Solow Model**
Zi-Yu Khoo, Kang Hao Lee, Zhibo Huang, Stéphane Bressan
Singapore
- **Quantum-Inspired Neural Network Model for Predictive BPaaS Management**
Ameni Hedhli, Haithem Mezni, Lamjed Ben Said
Tunisia
- **Predicting Psychiatric Diseases using AutoAI: A Performance Analysis based on Health Insurance Billing Data**
Markus Bertl, Peeter Ross, Dirk Draheim
Estonia
- **Improving Billboard Advertising Revenue using Transactional Modeling and Pattern Mining**
P. Revanth Rathan, *P. Krishna Reddy*, and Anirban Mondal
India

09:00 - 11:00

Track 2

Zoom Link:

<https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VlF2cDRtNExGZGF0dz09>Session: **2.2_DAWAK - Prediction Techniques & Knowledge Representation**Session Chair: **Ladjet Bellatreche****Prediction Techniques**

• A chain composite item recommender for lifelong pathways*Alexandre Chanson, Thomas Devogele, Nicolas Labroche, Patrick Marcel, Nicolas Ringuet, Vincent T'Kindt
France***Knowledge Representation**

• Universal Storage Adaption for Distributed RDF-triple Stores*Ahmed Al-Ghezi and Lena Wiese
Germany***• RDF data management is an analytical market, not a transaction one***Olivier Curé, Christophe Callé, Philippe Calvez
France***• Document Ranking for Curated Document Databases using BERT and Knowledge Graph Embeddings: Introducing GRAB-Rank***Iqra Muhammad, Danushka Bollegala, Frans Coenen, Carrol Gamble, Anna Kearney, Paula Williamson
United Kingdom*

09:00 - 11:00

Track 3

Zoom Link:

<https://jku.zoom.us/j/92039279301?pwd=QVplVEVsZmRUd1d0SFFDakNaTXZTQT09>Session: **2.3_DEXA - Knowledge Discovery**Session Chair: **Alfredo Cuzzocrea****• Toward New Model for Handling Inconsistency Issues in DL-Lite Knowledge Bases***Ghassen Hamdi, Mohamed Nazih Omri**Tunisia***• ContextWalk: Embedding Networks with Context Information Extracted from News Articles***Chaoran Chen, Mirco Schönfeld, Jürgen Pfeffer**Germany, Switzerland***• FIP-SHA - Finding Individual Profiles through SHared Accounts***Carolina Nery, Renata Galante, Weverton Cordeiro**Brazil***• A Tag-Based Transformer Community Question Answering Learning-to-Rank Model in the Home Improvement Domain***Macedo Maia, Siegfried Handschuh, Markus Endres**Germany, Switzerland***• An Autonomous Crowdsourcing System***Yu Suzuki**Japan*

09:00 - 11:00

Track 4

Zoom Link:

<https://jku.zoom.us/j/93281299781?pwd=N2RWVGZMMmNIYnFqQmNoaUtyeIRXZz09>Session: **2.4_DEXA - Machine Learning 1**Session Chair: **Allel Hadjali**

- **The Effect of IoT Data Completeness and Correctness on Explainable Machine Learning Models**
Shelernaz Azimi, Claus Pahl
Italy
- **Analysis of Behavioral Facilitation Tweets for Large-Scale Natural Disasters Dataset using Machine Learning**
Yu Suzuki, Yoshiki Yoneda, Akiyo Nadamoto
Japan
- **MMEnsemble: Imbalanced Classification Framework using Metric Learning and Multi-sampling Ratio Ensemble**
Takahiro Komamizu
Japan
- **Evaluate the Contribution of Multiple Participants in Federated Learning**
Zhaoyang You, Xinya Wu, Kexuan Chen, Xinyi Liu, Chao Wu
China

11:30 - 13:00

Track 1

Zoom Link:

<https://jku.zoom.us/j/95825096776?pwd=Z083SUFWM1VNYmhKd3JBZ0Y5UG5odz09>Session: **2.5_DEXA - Data Analysis and Data Modeling 2**Session Chair: **Sonali Agarwal**

- **Sarcasm Detection for Japanese Text Using BERT and Emoji**

*Yoshio Okimoto, Kosuke Suwa, **Jianwei Zhang**, and Lin Li*
Japan, China

- **Signalaw PBSA - A Deep Learning Model for Aspect-Based Sentiment Analysis for the Legal Domain**

*Isanka Rajapaksha, Chanika Ruchini Mudalige, Dilini Karunaratna, Nisansa de Silva, **Amal Shehan Perera**,
Gathika Ratnayaka*
Srilanka

- **BERT based sentiment analysis: A software engineering perspective**

***Himanshu Batra**, Narinder Singh Punn, Sanjay Kumar Sonbhadra, Sonali Agarwal*
India

- **A Stochastic Block Model based Approach to Detect Outliers in Networks**

*Fabrizio Angiulli, Fabio Fassetti, **Cristina Serrao***
Italy

- **Medical-Based Text Classification Using FastText Features and CNN-LSTM Model**

***Mohamed Walid Zeghdaoui**, Omar Bousaid, Fadila Bentayeb, Frederik Joly*
France

11:30 - 13:00

Track 2

Zoom Link:

<https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VlF2cDRtNEExGZGF0dz09>Session: **2.6_DAWAK - Advanced Analytics**Session Chair: **Rim Moussa**

- **Spark based Text Clustering Method using Hashing**

*Mohamed Aymen Ben HajKacem, Chiheb-Eddine Ben N'Cir, and Nadia Essoussi
Tunisia, Saudi Arabia*

- **Impact of textual data augmentation on linguistic pattern extraction to improve the idiomatycity of extractive summaries**

*Abdelghani Laifa, Laurent Gautier, and Christophe Cruz
France*

- **Explainability in Irony Detection**

*Ege Berk Buyukbas, Adnan Harun Dogan, Asli Umay Ozturk, and Pinar Karagoz
Turkey*

- **Contextual and Behavior Factors Extraction from Pedestrian Encounter Scenes Using Deep Language Models**

*Jithesh Gagan Sreeram, Xiao Luo and Renran Tian
USA*

- **Efficient Graph Analytics in Python for Large-scale Data Science**

*Xiantian Zhou and Carlos Ordonez
USA*

11:30 - 13:00

Track 3

Zoom Link:

<https://jku.zoom.us/j/92039279301?pwd=QVplVEVsZmRUd1d0SFFDakNaTXZTQT09>Session: **2.7_DEXA** - Data and Information Processing

Session Chair: Soumyava Das

- **An Urgency-aware and Revenue-based Itemset Placement Framework for Retail Stores**
Raghav Mittal, Anirban Mondal, Parul Chaudhary, P. Krishna Reddy
India
- **NV-QALSH: An NVM-Optimized Implementation of Query-Aware Locality-Sensitive Hashing**
Zhili Yao, Jiaqiao Zhang, Jianlin Feng
China
- **NCRedis: An NVM-Optimized Redis with Memory Caching**
Jiaqiao Zhang, Zhili Yao, Jianlin Feng
China
- **A Highly Modular Architecture for Canned Pattern Selection Problem**
Marinos Tzanikos, Maria Krommyda, Verena Kantere
Greece
- **AutoEncoder for Neuroimage**
Mingli Zhang, Fan Zhang, Jianxin Zhang, Ahmad Chaddad, Fenghua Guo, Wenbin Zhang, Ji Zhang, Alan Evans
Canada, China, USA, Australia

11:30 - 13:00

Track 4

Zoom Link:

<https://jku.zoom.us/j/93281299781?pwd=N2RWVGZMMmNIYnFqQmNoaUtyeIRXZz09>Session: **2.8_DEXA - Machine Learning 2**Session Chair: **Dhaval Patel**

- **DFL-Net: Effective Object Detection via Distinguishable Feature Learning**
Jia Xie, Shouhong Wan, Peiquan Jin
China
- **Transfer Learning for Larger, Broader, and Deeper Neural-Network Quantum States**
Remmy Zen, Stephane Bressan
Singapore
- **LGTM: A Fast and Accurate kNN Search Algorithm in High-dimensional Spaces**
Yusuke Arai, Daichi Amagata, Sumio Fujita, Takahiro Hara
Japan
- **TSX-Means: An optimal k search approach for time series clustering**
Jannai Tokotoko, Nazha Selmaoui-Folcher, Rodrigue Govan, and Hugues Lemonnier
New Caledonia
- **A Globally Optimal Label Selection Method via Genetic Algorithm for Multi-label Classification**
Tianqi Ji, Jun Li, Jianhua Xu
China
- **Using Cross Lingual Learning for Detecting Hate Speech in Portuguese**
Anderson Almeida Firmino, Claudio de Souza Baptista, and Anselmo Cardoso de Paiva
Brazil

14:30 - 15:30

Keynote 2

Zoom Link:

<https://jku.zoom.us/j/95211943907?pwd=a0VhOFFxdWhPOGNJL0VQenIsTUo0Zz09>**Don't handicap AI without Explicit Knowledge****Amit Sheth**, *University of South Carolina, Columbia, USA*Moderator: **Amin Tjoa**

15:45 - 17:45

Track 1

Zoom Link:

<https://jku.zoom.us/j/95825096776?pwd=Z083SUFWM1VNYmhKd3JBZ0Y5UG5odz09>Session: **2.9_DEXA - Semantic Web and Ontologies**Session Chair: **Elaheh Pourabbas**

- **Discovering HOI Semantics from Massive Image Data**

*Mingguang Zheng, Shouhong Wan, Peiquan Jin
China*

- **Fuzzy Ontology-Based Possibilistic Approach for Document Indexing Using Semantic Concept Relations**

*Kabil Boukhari, Mohamed Nazih Omri
Tunisia*

- **Multi-Objective Recommendations and Promotions at TOTAL**

*Idir Benouaret, Mohamed Bouadi, Sihem Amer-Yahia
France*

- **An Effective Algorithm for Classification of Text with Weak Sequential Relationships**

*Qiqiang Xu, Ji Zhang, Ting Yu, Wenbin Zhang, Mingli Zhang, Yonglong Luo, Fulong Chen, and Zhen Liu
China, Australia, USA, Canada*

- **PatRIS: Patent Ranking Inventive Solutions**

*Xin Ni, Ahmed Samet, Hicham Chibane, Denis Cavallucci
France*

15:45 - 17:45

Track 2

Zoom Link:

<https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VlF2cDRtNExGZGF0dz09>Session: **2.10_DEXA - Data Mining**Session Chair: **A Min Tjoa**

- **Diversified Pattern Mining on Large Graphs**

Xin Wang, Liang Tang, Yong Liu, Huayi Zhan, Xuanzhi Feng
China

- **EHUCM: An Efficient Algorithm for Mining High Utility Co-location Patterns from Spatial Datasets with Feature-Specific Utilities**

Yinqiao Li, Lizhen Wang, Peizhong Yang, Junyi Li
China

- **BERT-based Multi-Task Learning for Aspect Based Opinion Mining**

Manil Patel, Christie I. Ezeife
Canada

- **GPU-accelerated vertex orbit counting for 5-vertex subgraphs**

Shuya Suganami, Toshiyuki Amagasa
Japan

15:45 - 17:45

Track 3

Zoom Link:

<https://jku.zoom.us/j/92039279301?pwd=QVplVEVsZmRUd1d0SFFDakNaTXZTQT09>Session: **2.11_DEXA - Information Retrieval**Session Chair: **Toshiyuki Amagasa**

- **Improving Quality of Ensemble Technique for Categorical Data Clustering Using Granule Computing**

Rahmah Brnawy, Nematollaah Shiri
Canada

- **Online Optimized Product Quantization for Dynamic Database using SVD-Updating**

Kota Yukawa, Toshiyuki Amagasa
Japan

- **Querying collections of tree-structured records in the presence of within-record referential constraints**

Foto N. Afrati, Matthew Damigos
Greece

- **Dealing with Plethoric Answers of SPARQL Queries**

Louise Parkin, Brice Chardin, Stephane Jean, Allel Hadjali, Mickael Baron
France

15:45 - 17:45

Track 4

Zoom Link:

<https://jku.zoom.us/j/93281299781?pwd=N2RWVGZMMmNIYnFqQmNoaUtyeIRXZz09>Session: **2.12_ProTime**Session Chair: **Florian Sobieczky**

- **ProTime Keynotes Talk**

Prof. Siegfried Hoermann

- **Approximate Fault Tolerance for Edge Stream Processing**

*Daiki Takao, Kento Sugiura, Yoshiharu Ishikawa
Japan*

- **Time Series Pattern Discovery by Deep Learning and Graph Mining**

*Alex Romanova
USA*

- **Deep Learning Rule for Efficient Changepoint Detection in the Presence of non-linear Trends**

*Salma Mahmoud, Jorge Martinez-Gil, Patrick Praher, Bernhard Freudenthaler and Alexander Girkingner
Austria*

PROGRAM

32nd DEXA2021 Conferences & Workshops
27 – 30 September 2021

Day 3, Wednesday, 29 Sep 2021

All times are Central Europe time (Vienna, which is UTC+2)
Proceedings can be accessed at (http://www.dexa.org/free_proceedings)

Papers Presentation

09:00 -11:00

Track 1

Zoom Link:

<https://jku.zoom.us/j/95825096776?pwd=Z083SUFWM1VNYmhKd3JBZ0Y5UG5odz09>

Session: **3.1_DEXA - Prediction and Decision Support 1**

Session Chair: **Piotr Wisniewski**

- **Feature Selection and Software Defect Prediction by Different Ensemble Classifiers**
Natalya Shakhovska, Vitaliy Yakovyna
Ukraine, Poland
- **Shared-Memory Parallel Hash-Based Stream Join in Continuous Data Streams**
Peyman Behzadnia
USA
- **Traffic Flow Prediction through the Fusion of Spatial-Temporal Data and Points of Interest**
Wanzhi Xiao, Li Kuang, Ying An
China
- **Predicting Student Performance in Experiential Education**
Lejia Lin, Leonard Wee Liat Tan, Nicole Hui Lin Kan, Ooi Kiang Tan, Chun Chau Sze, and Wilson Wen Bin Goh
Singapore
- **Log-based Anomaly Detection with Multi-Head Scaled Dot-Product Attention Mechanism**
Qingfeng Du, Liang Zhao, Jincheng Xu, Yongqi Han, Shuangli Zhang
China

09:00 -11:00

Track 2

Zoom Link:

<https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VlF2cDRtNExGZGF0dz09>Session: **3.2_DAWAK - Data Quality &
Data Warehousing Processes and Maintenance**Session Chair: **Robert Wrembel***Data Quality*

- **A new accurate clustering approach for detecting different densities in high dimensional data**
Nabil El Malki, Robin Cugny, Olivier Teste and Franck Ravat
France
- **ODCA: an Outlier Detection Approach to Deal with Correlated Attributes**
Fabrizio Angiulli, Fabio Fassetti, and Cristina Serrao
Italy
- **A Novel Neurofuzzy Approach for Semantic Similarity Measurement**
Jorge Martinez-Gil, Riad Mokadem, Josef Küng, Abdelkader Hameurlain
Austria, France

Data Warehousing Processes and Maintenance

- **Smart-Views: Decentralized OLAP View Management using Blockchains**
Kostas Messanakis, Petros Demetrakopoulos, and Yannis Kotidis
Greece
- **A workload-aware change data capture framework for data warehousing**
Weiping Qu, Xiufeng Liu, and Stefan Dessloch
Germany
- **Integrated process data and organizational data analysis for business process improvement**
Alexis Artus, Andres Borges, Daniel Calegari, and Andrea Delgado
Uruguay

09:00 - 11:00

Track 3

Zoom Link:

<https://jku.zoom.us/j/92039279301?pwd=QVplVEVsZmRUd1d0SFFDakNaTXZTQT09>Session: **3.3_EGOVIS** - e-Government Theoretical Background and CasesSession Chair: **Andrea Kő**

- **Government as a Platform? Constitutive Elements of Public Service Platforms**
Benedict Bender and *Moreen Heine*
Germany
- **A Solution to Support Integrity in the Lawful Interception Ecosystem**
Francesco Buccafurri, Angelo Consoli, Cecilia Labrini and *Alice Mariotti Nesurini*
Italy, Switzerland
- **Can Tech4Good Prevent Domestic Violence and Femicides? An Intelligent System Design Proposal for Restraining Order Implementations**
Hüseyin Umutcan Ay, Alime Aysu Öner, Nihan Yıldırım
Turkey
- **Toward Smart City Architecture Principles: A Cornerstone in the Case of Smart City Duisburg**
Peder Bergan, Kevin Rehring, Michel Muschkiet, Frederik Ahlemann, Léonie Hackemann
Germany
- **Analysing the Surface Urban Heat Island effect with Copernicus data**
Lorenza Apicella, Alfonso Quarati, Monica De Martino
Italy, Switzerland
- **Vulnerability of State-Provided Electronic Identification: The Case of ROCA in Estonia**
Astrid Valtna-Dvořák, Silvia Lips, Valentyn Tsap, Rain Ottis, Jaan Priisalu, Dirk Draheim
Estonia

09:00 -11:00

Track 4

Zoom Link:

<https://jku.zoom.us/j/93281299781?pwd=N2RWVGZMMmNIYnFqQmNoaUtyeIRXZz09>Session: **3.4_TrustBUS**

- **Welcoming Notes**

Kostas Lambrinouidakis & Simone Fischer-Hübner

Trust Evaluation

Session Chair: **Kostas Lambrinouidakis**

- **Monitoring Access Reviews by Crowd Labelling**

*Sebastian Groll, Sascha Kern, Ludwig Fuchs and Günther Pernul
Germany*

- **Automating the evaluation of trustworthiness**

*Marc Sel and Chris Mitchell
Belgium, United Kingdom***TrustBUS Keynote Talk**

Session Chair: **Simone Fischer-Hübner**

- **Towards privacy-preserving and trustworthy AI**

Melek Önen, Eurecom

11:30 - 13:00

Track 1

Zoom Link:

<https://jku.zoom.us/j/95825096776?pwd=Z083SUFWM1VNYmhKd3JBZ0Y5UG5odz09>Session: **3.5_DEXA - Databases and Data Management**Session Chair: **Shelly Sachdeva**

- **Efficient Discovery of Partial Periodic-Frequent Patterns in Temporal Databases**

So Nakamura, R. Uday Kiran, P. Likhitha, P. Ravikumar, Yutaka Watanobe, Minh Son Dao, Koji Zettsu, and Masashi Toyoda
Japan

- **Database Framework for Supporting Retention Policies**

Nick Scope, Alexander Rasin, James Wagner, Ben Lenard, Karen Heart
USA

- **Internal Data Imputation in Data Warehouse Dimensions**

Yuzhao Yang, Fatma Abdelhedi, Jérôme Darmont, Franck Ravat, Olivier Teste
France

- **Purging Data from Backups by Encryption**

Nick Scope, Alexander Rasin, James Wagner, Ben Lenard, Karen Heart
USA

11:30 - 13:00

Track 2

Zoom Link:

<https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VlF2cDRtNExGZGF0dz09>Session: **3.6_DAWAK - Machine Learning and Analytics**Session Chair: **Matteo Golfarelli**

- **Multi-label Feature Selection Algorithm via Maximizing Label Correlation-aware Relevance and Minimizing Redundance with Mutation Binary Particle Swarm Optimization**

Xiaolin Zhu, Yuanyuan Tao, Jun Li, Jianhua Xu
China

- **Boosting Latent Inference of Resident Preference from Electricity Usage - A Demonstration on Online Advertisement Strategies**

Lo Pang-Yun Ting, Po-Hui Wu, Jhe-Yun Jhang, Kai-Jun Yang, Yen-Ju Chen, and Kun-Ta Chuang
Taiwan

- **Motif Based Feature Vectors: Towards a Homogeneous Data Representation for Cardiovascular Diseases Classification**

Hanadi Aldosari, Frans Coenen, Gregory Y. H. Lip, and Yalin Zheng
United Kingdom

- **Filter-based Feature Selection Methods for Industrial Sensor Data: A Review**

Sabrina Luftensteiner, Michael Mayr, and Georgios Chasparis
Austria

- **A Declarative Framework for mining Top-k High Utility Itemsets**

Amel Hidouri, Said Jabbour, Badran Raddaoui, Mouna Chebbah, and Boutheina Ben Yaghlane
Tunisia, France

- **Mining Partially-Ordered Episode Rules with the Head Support**

Yangming Chen, Philippe Fournier-Viger, Farid Nouioua, and Youxi Wu
China, France

11:30 - 13:00

Track 3

Zoom Link:

<https://jku.zoom.us/j/92039279301?pwd=QVplVEVsZmRUd1d0SFFDakNaTXZTQT09>Session: **3.7_EGOVIS - Identity Management and Legal Issues**Session Chair: **Francesco Buccafurri**

- **Transparency by default: GDPR Patterns for Agile Development**
Baraa Zieni, Dayana Spagnuolo, and Reiko Heckel
United Kingdom, Netherlands
- **Anonymization between minimization and erasure: The perspectives of French and Italian data protection authorities**
Emanuela Podda and Francesco Vigna
Italy
- **A Legal Framework for Digital Transformation: A Proposal based on a Comparative Case Study**
Rozha K. Ahmed, Khder H. Muhammed, Awat O. Qadir, Soran I. Arif, Silvia Lips, Katrin Nyman-Metcalf, Ingrid Pappel and Dirk Draheim
Estonia, Iraq

11:30 - 13:00

Track 4

Zoom Link:

<https://jku.zoom.us/j/93281299781?pwd=N2RWVGZMMmNIYnFqQmNoaUtyeIRXZz09>Session: **3.8_TrustBUS****Security Risks**Session Chair: **Kostas Lambrinouidakis**

- **At your service 24/7 or not? Denial of Service on ESInet systems**
Zisis Tsiatsikas, Georgios Kambourakis and Dimitrios Geneiatakis
Greece, Italy, Belgium
- **Impact of False Positives and False Negatives on Security Risks in Transactions under Threat**
Doncho Donchev, Vassil Vassilev and Demir Tonchev
United Kingdom, Belgium

Web SecuritySession Chair: **Simone Fischer-Hübner**

- **Launching Adversarial Label Contamination Attacks Against Malicious URL Detection**
Bruno Marchand, Nikolaos Pitropakis, Bill Buchanan and Costas Lambrinouidakis
United Kingdom, Greece
- **Neither good nor bad: A large-scale empirical analysis of HTTP security response headers**
Georgios Karopoulos, Dimitris Geneiatakis and Georgios Kambourakis
Italy, Belgium

14:30 - 15:30

PANEL

Zoom Link:

<https://jku.zoom.us/j/95211943907?pwd=a0VhOFFxdWhPOGNJL0VQenIsTUo0Zz09>**Big Minds Sharing their Vision on the Future of AI**

Moderator:

- **Bernhard Moser**, *Software Competence Center Hagenberg and Austrian Society for Artificial Intelligence, Austria*

Panelists:

- **Battista Biggio**, *University of Cagliari, Italy*
- **Claudia Diaz**, *Katholieke Universiteit Leuven, Belgium*
- **Heiko Paulheim**, *University Mannheim, Germany*
- **Olga Saukh**, *Complexity Science Hub, Austria*

15:45 - 17:45

Track 1

Zoom Link:

<https://jku.zoom.us/j/95825096776?pwd=Z083SUFWM1VNYmhKd3JBZ0Y5UG5odz09>Session: **3.9_DEXA - Authenticity, Privacy, Security and Trust**Session Chair: **Anna Kayem**

- **Less is More: Feature Choosing under Privacy-Preservation for Efficient Web Spam Detection**
Jia-Qing Wang, Yan Zhu, Huan He, Chun-Ping Li
China
- **Construction of Differentially Private Summaries Over Fully Homomorphic En-ryption**
Shojiro Ushiyama, Tsubasa Takahashi, Masashi Kudo, Hayato Yamana
Japan
- **SafecareOnto: A Cyber-Physical Security Ontology for Healthcare Systems**
Fatma-Zohra Hannou, Faten Atigui, Nadira Lammari, Samira Si-Said Cherfi
France
- **Repurpose Image Identification for Fake News Detection**
Steven Jia he Lee, Tangqing Li, Wynne Hsu, Mong Li Lee
Singapore

15:45 - 17:45

Track 2

Zoom Link:

<https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VlF2cDRtNEExGZGF0dz09>Session: **3.10_DEXA - Prediction and Decision Support 2**Session Chair: **Sergio Ilarri**

- **Enhancing Scan Matching Algorithms via Genetic Programming for Supporting Big Moving Objects Tracking and Analysis in Emerging Environments**
Alfredo Cuzzocrea, Kristijan Lenac, Enzo Mumolo
Croatia, Italy
- **A Stacking Approach for Cross-Domain Argument Identification**
Alaa Alhamzeh, Mohamed Bouhaouel, Előd Egyed-Zsigmond, Jelena Mitrovic, Lionel Brunie, Harald Kosch
Germany, France
- **Property Analysis of Stay Points for POI Recommendation**
Junjie Sun, Yuta Matsushima, Qiang Ma
Japan
- **Beacon Technology for Retailers - Tracking Consumer Behavior inside Brick-and-Mortar-Stores**
Alexander Voelz, Andreas Mladenow, Christine Strauss
Austria

15:45 - 17:45

Track 3

Zoom Link:

<https://jku.zoom.us/j/92039279301?pwd=QVplVEVsZmRUd1d0SFFDakNaTXZTQT09>Session: **3.11_EGOVIS - Artificial Intelligence and Machine Learning in E-Government Context**Session Chair: **Enrico Francesconi**

- **Classification and association rules in Brazilian Supreme Court judgments on pre-trial detention**

Thiago Raulino Dal Pont, Isabela Cristina Sabo, Pablo Ernesto Vigneaux Wil-ton, Victor Araújo de Menezes, Rafael Copetti, Luciano Zambrota, Pablo Procópio Martins, Edjandir Corrêa Costa, Edimeia Liliani Schnitzler, Paloma Maria Santos, Rodrigo Rafael Cunha, Gerson Bovi Kaster and Aires José Rover
Brazil

- **Social Security Reform in Brazil: a Twitter sentiment analysis**

Rafael D. Ricci, Elaine R. Faria, Rodrigo S. Miani and Paulo H.R. Gabriel
Brazil

- **Demystifying Tax Evasion Using Variational Graph Autoencoders**

Priya Mehta, Sandeep Kumar, Ravi Kumar and Ch Sobhan Babu
India

- **Using Machine Learning for Risk Classification in Brazilian Federal Voluntary Transfers**

Daniel M. Guilhon, Aillkeen Bezerra de Oliveira, Daniel L. Gomes Jr, Anselmo C. Paiva, Cláudio de Souza Baptista, Geraldo Braz Júnior and João Dallysson Sousa de Almeida
Brazil

15:45 - 17:45

Track 4

Zoom Link:

<https://jku.zoom.us/j/93281299781?pwd=N2RWVGZMMmNIYnFqQmNoaUtyelRXZz09>Session: **3.12_TrustBUS****Data Protection and Privacy Controls**Session Chair: **Kostas Lambrinoudakis**

- **Components and Architecture for the Implementation of Technology-driven Employee Data Protection**
Florian Dehling, Denis Feth, Svenja Polst, Bianca Steffes and Jan Tolsdorf
Germany
- **Towards an Information Privacy and Personal Data Protection Competency Model for Citizens**
Aggeliki Tsohou
Greece
- **A Category-Based Framework for Privacy-Aware Collaborative Access Control**
Denis Obrezkov, Karsten Sohr, Rainer Malaka
Germany

Privacy and UsersSession Chair: **Simone Fischer-Hübner**

- **Car drivers' privacy concerns and trust perceptions**
Giampaolo Bella, Pietro Biondi and Giuseppe Tudisco
Italy
- **AuthGuide: Analyzing Security, Privacy and Usability Trade-offs in Multi-Factor Authentication**
Davy Preuveneers, Sander Joos and Wouter Joosen
Belgium

PROGRAM

32nd DEXA2021 Conferences & Workshops
27 – 30 September 2021

Day 4, Thursday, 30 Sep 2021

*All times are Central Europe time (Vienna, which is UTC+2)
Proceedings can be accessed at (http://www.dexa.org/free_proceedings)*

09:00 - 10:00

Keynotes 3

Zoom Link:

<https://jku.zoom.us/j/95211943907?pwd=a0VhOFFxdWhPOGNJL0VQenIsTUo0Zz09>

Extreme-Scale Model-Based Time Series Management with ModelarDB

Torben Bach Pedersen, *Aalborg University, Denmark*

Moderator : **Robert Wrembel**

Papers Presentation

10:30 - 12:30

Track 1

Zoom Link:

<https://jku.zoom.us/j/95825096776?pwd=Z083SUFWM1VNYmhKd3JBZ0Y5UG5odz09>

Session: **4.1_DEXA - Temporal, Spatial, and High Dimensional Databases**

Session Chair: **Michal Kratky**

- **Event Related Data Collection from Microblog Stream**

Manoj K. Agarwal, *Animesh Baranawal, Yogesh Simmhan, Manish Gupta*
India

- **GACE: Graph-Attention-Network-Based Cardinality Estimator**

Daobing Zhu, *Dongsheng He, Shuhuan Fan, Jianming Liao, Mengshu Hou*
China

- **A Two-Phase Approach for Enumeration of Maximal (Δ, γ) Cliques of a Temporal Network**

Suman Banerjee, *Bithika Pal*
India

10:30 - 12:30

Track 2

Zoom Link:

<https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VlF2cDRtNEExGZGF0dz09>Session: **4.2_AICARES**Session Chair: **Sohail Khan**

- **Opening Remarks**

Sohail Khan & Thomas Strasser

- **Short-term Renewable Energy Forecasting in Greece using Prophet Decomposition and Tree-based Ensembles**

*Argyrios Vartholomaios, Stamatis Karlos, Eleftherios Kouloumpris, Grigorios Tsoumakas
Greece*

- **A Comparative Study of Deep Learning Approaches for Day-Ahead Load Forecasting of an Electric Car Fleet**

*Ahmad Mohsenimanesh, Evgueniy Entchev, Alexei Lapouchnian, Hajo Ribberink
Canada*

10:30 - 12:30

Track 3

Zoom Link:

<https://jku.zoom.us/j/92039279301?pwd=QVplVEVsZmRUd1d0SFFDakNaTXZTQT09>Session: **4.3_BIOKDD**Session Chair: **Lukas Fischer & Bernhard Moser**

- **Integrating Gene Ontology based Grouping and Ranking into the machine learning algorithm for gene expression data analysis**

*Malik Yousef, Ahmet Sayici, Burcu Bakir-Gungor
Israel, Turkey*

- **SVM-RCE-R-OPT: Optimization of Scoring Function For SVM-RCE-R**

*Malik Yousef, Amhar Jabeer and Burcu Bakir-Gungor
Israel, Turkey*

10:30 - 12:30

Track 4

Zoom Link:

<https://jku.zoom.us/j/93281299781?pwd=N2RWVGZMMmNIYnFqQmNoaUtyeIRXZz09>Session: **4.4_ AISys**Session Chair: **Gerald Czech & Thomas Hoch**

- **Robust and Efficient Bio-Inspired Data-Sampling Prototype for Time-Series Analysis**
Michael Lunglmayr, Günther Lindorfer, Bernhard Moser
Austria
- **Membership-Mappings for Data Representation Learning: Measure Theoretic Conceptualization**
Mohit Kumar, Bernhard Moser, Lukas Fischer, Bernhard Freudenthaler
Germany, Austria
- **Membership-Mappings for Data Representation Learning: A Bregman Divergence Based Conditionally Deep Autoencoder**
Mohit Kumar, Bernhard Moser, Lukas Fischer, Bernhard Freudenthaler
Germany, Austria
- **Data Catalogs: A Systematic Literature Review and Guidelines to Implementation**
Lisa Ehrlinger, Johannes Schrott, Martin Melichar, Nicolas Kirchmayr, Wolf-ram Wöß
Austria
- **Task-specific Automation in Deep Learning Processes**
Georg Buchgeher, Gerald Czech, Adriano Souza Ribeiro, Werner Kloihofner, Paolo Meloni, Paola Busia, Gianfranco Deriu, Maura Pintor, Battista Biggio, Cristina Chesta, Luca Rinelli, David Solans, Manuel Portela
Austria, Italy, Spain

12:30

Best Paper Awards and Closing

Zoom Link: <https://jku.zoom.us/j/95211943907?pwd=a0VhOFFxdWhPOGNJL0VQenIsTUo0Zz09>**Abdelkader Hameurlain, Anna Revell, Gabriela Wagner, Ismail Khalil and Christine Strauss (Moderator)**

The links included in this program will lead you to the corresponding Zoom sessions of the conference and are available to registered DEXA 2021 Conferences and Workshops participants only. By clicking on one of those links, you accept the following terms and conditions:

Program modifications/postponements

The Organizer reserves the right to modify as well as shorten or lengthen the content of the program, change the speakers and the schedule of presentations without any liability or warranty on his part.

The Organizer retains the right to reschedule or cancel the Event and all related products and/or services because of force majeure or for important reasons. Important reasons are particularly given, in case of non-reaching of a minimum number of participants or if presenters, speakers or trainers are prevented.

The Organizer does not accept any warranty or liability for the relevance, up-to-dateness, correctness and completeness in respect of event documentation and content.

The Organizer is only liable for damage which is caused by wilful act or gross negligence of the Organizer himself or his agents or staff. This limitation of liability shall not be applicable to personal injury.

Copyright

Material that is presented or that you may be given during the conference is copyrighted material and must not be duplicated or used commercially without explicit permission of the respective copyright holder.

Audiovisual recordings, textual messages

The Organizer reserves the right to take audiovisual recordings of the presentations and associated question/answer (Q/A) sessions and to publish these recordings on public platforms (such as YouTube or Vimeo), subject to explicit consent by the respective speaker. By participating in the Event (and particularly in the Q/A sessions), the participant agrees with the publication of these audiovisual recordings as long as they do not violate the legitimate interest of the pictured persons according to § 78 Urheberrechtsgesetz (Austrian copyright law).

The Organizer reserves the right to collect and retain textual messages posted in the virtual conference venue and other means of textual chat accessible to all participants of the Event.

Policy Against Harassment

You acknowledge ACM's Policy Against Harassment at ACM activities <https://www.acm.org/about-acm/policy-against-harassment> and agree that behavior such as the following will constitute grounds for actions against you:

Abusive action directed at an individual, such as threats intimidation, or bullying

Racism, homophobia, and other behavior that discriminates against a group or class of people

Sexual harassment of any kind, such as unwelcome sexual advances or words/actions of a sexual nature

If you are involved in or witness any such incident, please inform the event organizers.

The privacy policy, terms of use, and assistance can be found at <https://help.jku.at/im/en/it-systeme/videokonferenz-mit-zoom>