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
OPENING
- Gabriele Kotsis & Ismail Khalil
Zoom Link: https://jku.zoom.us/j/95211943907?pwd=a0VhOFFxdWhPOGNJLOVQenlSTU0OZz09

14:30 - 15:30
Keynotes 1
Zoom Link: https://jku.zoom.us/j/95211943907?pwd=a0VhOFFxdWhPOGNJLOVQenlSTU0OZz09
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=Z083SUFWM1VNYmhhKd3JBY5UG5odz09
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 2**

Zoom Link: [https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VIF2cDRtNExGZGF0dz09](https://jku.zoom.us/j/93375610300?pwd=TUdRS3Z6dnV5VIF2cDRtNExGZGF0dz09)

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=QVplIVEVsZmRUd1d0SFFDakNaTXZTQT09  
Session: 1.3_IWCFS  
Session Chair: Atif Mashkoor & 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 Mashkoor  
  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=N2RWVGZMMmNlYnFqQmNoaUtyelRXZz09  
Session: **1.4_MLKgraphs**  
Session Chair: **Anna Fensel & Jorge Martinez-Gil**

- **Placeholder constraint evaluation in simulation graphs**  
  *Stefan Nadschläger, Markus Jäger, Daniel Hafer, 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 Ongenae*  
  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 Snehanshu Saha*  
  India
Day 2, Tuesday, 28 Sep 2021

**All times are Central Europe time (Vienna, which is UTC+2)**
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**Papers Presentation**

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<thead>
<tr>
<th>Time</th>
<th>Track 1</th>
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<tr>
<td>09:00 - 11:00</td>
<td>Zoom Link: <a href="https://jku.zoom.us/j/95825096776?pwd=Z083UFWM1VNYmhKd3JBZ0Y5UG5odz09">https://jku.zoom.us/j/95825096776?pwd=Z083UFWM1VNYmhKd3JBZ0Y5UG5odz09</a></td>
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<tr>
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<td>Session: <strong>2.1 DEXA - Data Analysis and Data Modeling 1</strong></td>
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<td>Session Chair: <strong>Hamidah Ibrahim</strong></td>
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</tbody>
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- **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=TUdRS3Z6dnV5VlF2cDRtNEExGZGF0dz09  
Session: 2.2_DAWAK - Prediction Techniques & Knowledge Representation  
Session Chair: Ladjel 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=QVpIWEVzZmRUd1d0SFFDakNaTXZTQT09

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=N2RWVGZMMmNIYnFqQmNoaUtyeRXZz09
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=Z083SUFWMyhKd3JBZ0Y5UG5odz09  
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

- **Sigmalaw PBSA - A Deep Learning Model for Aspect-Based Sentiment Analysis for the Legal Domain**  
  Isanka Rajapaksha, Chanika Ruchini Mudalige, Dilini Karunarathna, 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 Boussaid, 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
  idiomaticity 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 Gugan 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=QVplVEVsZmR Ud1d0SFFDakNaTXZTQT09
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=N2RWVGZMMnIyYnFqQmNoaUtyelRXZz09

**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=a0VhOFFxWhPOGNJL0VQenIsTU00Zz09

**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 Saganami, Toshiyuki Amagasa  
  Japan
15:45 - 17:45 Track 3
Zoom Link: https://jku.zoom.us/j/92039279301?pwd=QVplVEVsZmRUd1d0SFFDakNaTXZQT09

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=N2RWVGZMMmNIYnFqQmNoaUtyelRXZz09
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*  
  Austria

- **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 Girkinger*  
  Austria
Day 3, Wednesday, 29 Sep 2021

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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=TUdRS3Z6dnV5VlF2cDRtNEExGZGF0dz09  
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 Colegari, and Andrea Delgado  
  Uruguay
09:00 -11:00  
Track 3
Zoom Link: https://jku.zoom.us/j/92039279301?pwd=QVplVEVsZmRUd0SFFDakNaTXZTQT09
Session: 3.3_EGOVIS - e-Government Theoretical Background and Cases
Session 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=N2RWVGZMMmNIYnFqQmNoaUtyeRXZz09
Session: 3.4_TrustBUS

- Welcoming Notes
  Kostas Lambrinoudakis & Simone Fischer-Hübner

Trust Evaluation
Session Chair: Kostas Lambrinoudakis

- 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=QVplVEVsZmRUd0SFFDakNaTXZTQT09

Session: 3.7_EGOVIS - Identity Management and Legal Issues
Session Chair: Francesco Buccafurri

- Transparency by default: GDPR Patterns for Agile Development
  Baraa Zieni, Dayana Spagnuelo, 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
  Estonia, Iraq
11:30 - 13:00  Track 4  
Zoom Link:  
https://jku.zoom.us/j/93281299781?pwd=N2RWVGZMMmNIYnFgQmNoaUtyelRXZz09  
Session: 3.8_TrustBUS

**Security Risks**  
Session Chair: Kostas Lambrinoudakis

- **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 Security**  
Session Chair: Simone Fischer-Hübner

- **Launching Adversarial Label Contamination Attacks Against Malicious URL Detection**  
  Bruno Marchand, Nikolaos Pitropakis, Bill Buchanan and Costas Lambrinoudakis  
  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=a0VhOFFxdWhPOGNJL0QenIsTUo0Zz09

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 Encryption  
  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 Sherfi  
  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=TUdRS3Z6dnV5VIIF2cDRtNExGZGF0dz09

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 Zambrotta, Pablo Procópio Martins, Edjandir Corrêa Costa, Edimeia Liliani Schnitzler, Paloma Maria Santós, 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 Users  
Session Chair: Simone Fischer-Hübner

- **Car drivers’ privacy concerns and trust perceptions**  
  Giampaolo Bella, Pietro Biondi and Giuseppe Tudisco  
  Italy  

  Davy Preuveneers, Sander Joos and Wouter Joosen  
  Belgium
Day 4, Thursday, 30 Sep 2021

09:00 - 10:00

Keynotes 3
Zoom Link:
https://jku.zoom.us/j/95211943907?pwd=a0VhOFFxdWhPOGNjL0VQenlSTUo0Zz09

Extreme-Scale Model-Based Time Series Management with ModelarDB
Torben Bach Pedersen, Aalborg University, Denmark
Moderator: Robert Wrembel

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=TUdRS3Z6dnV5Vlf2cDRtNExGZGF0dz09
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, Evgeniy Entchev, Alexei Lapouchian, Hajo Ribberink
  Canada, Cameroon

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=N2RWVGZMMmNlYnFqQmNoaUtyelRXZz09
Session: 4.4_ AlSys
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 Kloibhofer, 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=a0VhOFFxWhPOGJL0VQenlTuo0Zz09
Abdelkader Hameurlain, Anna Revell. Gabriela Wagner and Christine Strauss (Moderator)

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