

CIKM 2020: The 29th ACM International Conference on Information and Knowledge Management

Event Schedule

Mon, Oct 19, 2020

6:00am

Challenges and Solutions to the Student Dropout Prediction Problem in Online Courses

🕒 6:00am - 9:00am, Oct 19

📍 Limerick

Tutorials

Online education is one of the wealthiest industries in the world. The relevance of this sector has increased due to the COVID-19 emergency, forcing nations to convert their education systems towards online environments quickly. Despite the benefits of distance learning, students enrolled in online degree programs have a higher chance of dropping out than those attending a conventional classroom environment. Being able to detect student withdrawals early is fundamental to build the next generation learning environment. In machine learning, this is known as the student dropout prediction (SDP) problem. In this tutorial, intermediate-level academicians, industry practitioners, and institutional officers will learn existing works and current progress within this particular domain. We provide a mathematical formalisation to the SDP problem, and we discuss in a comprehensive review the most useful aspects to consider for this specific domain: definition of the prediction problem, input modelling, adopted prediction technique, evaluation framework, standard benchmark datasets, and privacy concerns.

Tutors:

Bardh Prenkaj; Giovanni Stilo; Lorenzo Madeddu

IoT Data Quality

🕒 6:00am - 9:00am, Oct 19

📍 Galway

Tutorials

Data quality issues have been widely recognized in IoT data, and prevent the downstream applications. Improving IoT data quality however is particularly challenging, given the distinct features over the IoT data such as pervasive noises, unaligned timestamps, consecutive errors, misplaced columns, correlated errors and so on. In this tutorial, we review the state-of-the-art techniques for IoT data quality management. In particular, we discuss how the dedicated approaches improve various data quality dimensions, including validity, completeness and consistency. Among others, we further highlight the recent advances by deep learning techniques for IoT data quality. Finally, we indicate the open problems in IoT data quality management, such as benchmark or interpretation of data quality issues.

Tutors:

Shaoxu Song; Aoqian Zhang

14th International Workshop on Data and Text Mining in Biomedical Informatics (DTMBio) - Part 1

🕒 6:00am - 11:00am, Oct 19

📍 Waterford

Workshops

The focus of this workshop is to bring together researchers who are interested in applying advanced biomedical big-data and text mining techniques to improve sharing, integration, managing and understanding of biomedical information.

Workshop Chairs:

Hyojung Paik PhD, Senior Researcher, Korea Institute of Science and Technology Institute

Mark Stevenson PhD, Senior Lecturer, Dept. of Computer Science, University of Sheffield, UK

Sunyong Yoo PhD, Assistant Professor, School of Electronics and Computer Engineering, Connam National University, Korea

Albert No PhD, Assistant Professor, Dept. of Electronic and Electrical Engineering, Hongik University, Korea

Hojung Nam PhD, Associate Professor, School of Electrical Engineering and Computer Science, Gwangju Institute of Science and Technology, Korea

1st International Workshop Investigating Learning During Web Search (IWILDS) - Part 1

🕒 6:00am - 11:00am, Oct 19

📍 Cork

Workshops

Web search is one of the most ubiquitous online activities, commonly used for learning purposes, i.e. to acquire or extend one's knowledge or skills about certain topics or procedures. The importance of learning as an outcome of Web search has also been recognized in research at the intersection of information retrieval, human-computer interaction, psychology, and educational sciences. When learning by searching the Web, individuals are confronted with an unprecedented amount of information of varying quality. Thus, successful learning on the Web requires high degrees of self-regulation and might be supported by an adequate design of search or recommender systems and training tools. Search as Learning (SAL) research examines relationships between querying, navigation, and reading behavior during Web search and the resulting learning outcomes, and how they can be measured, predicted, and supported.

Building on the growing research community of SAL, IWILDS provides an interdisciplinary forum in a full-day workshop that consists of keynotes, presentations of accepted papers, and discussion. The intended audience consists of researchers and practitioners from the general areas of computer science, psychology, information science, and educational science.

Workshop Chairs:

Anett Hoppe, Leibniz Information Centre for Science & Technology (TIB), Hannover, Germany

Ran Yu, Leibniz Institute for the Social Sciences (GESIS), Cologne, Germany

Yvonne Kammerer, Leibniz-Institut für Wissensmedien (IWM), Tübingen, Germany / Open Universiteit, Heerlen, The Netherlands

Ladislao Salmerón, University of Valencia, Department of Developmental and Educational Psychology, Research Unit on Reading (ERI Lectura), Valencia, Spain

8:00am

Neural Bayesian Information Processing

🕒 8:00am - 11:00am, Oct 19

📍 Dublin

Tutorials

This half-day tutorial addresses the fundamentals and advances in deep Bayesian learning for a variety of information systems ranging from speech recognition to document summarization, text classification, information extraction, image caption generation, sentence/image generation, dialogue management, sentiment classification, recommendation system, question answering and machine translation, to name a few. Traditionally, "deep learning" is taken to be a learning process from source inputs to target outputs where the inference or optimization is based on the real-valued deterministic model. The "semantic structure" in words, sentences, entities, images, videos, actions and documents may not be well expressed or correctly optimized in mathematical logic or computer programs. The "distribution function" in discrete or continuous latent variable model for natural sentences or images may not be properly decomposed or estimated. A systematic and elaborate transfer learning is required to meet source and target domains. This tutorial addresses the fundamentals of statistical models and neural networks, and focus on a series of advanced Bayesian models and deep models including variational autoencoder (VAE), stochastic temporal convolutional network, stochastic recurrent neural network, sequence-to-sequence model, attention mechanism, memory-augmented neural network, skip neural network, temporal difference VAE, predictive state neural network, and generative or normalizing flow. Enhancing the prior/posterior representation is addressed. We present how these models are connected and why they work for information and knowledge management on symbolic and complex patterns in temporal and spatial data. The variational inference and sampling method are formulated to tackle the optimization for complicated

models. The word, sentence and image embeddings are merged with structural or semantic constraint. A series of case studies are presented to tackle different issues in neural Bayesian information processing. At last, we will point out a number of directions and outlooks for future studies. This tutorial serves the objectives to introduce novices to major topics within deep Bayesian learning, motivate and explain a topic of emerging importance for data mining and information retrieval, and present a novel synthesis combining distinct lines of machine learning work.

Tutors:

Jen-Tzung Chien

3:00pm

Knowledge Graphs; A Half Day Tutorial on the History of Knowledge Graph's Main Ideas

🕒 3:00pm - 6:00pm, Oct 19

📍 Limerick

Tutorials

Knowledge Graphs can be considered as fulfilling an early vision in Computer Science of creating intelligent systems that integrate knowledge and data at large scale. Stemming from scientific advancements in research areas of Semantic Web, Databases, Knowledge representation, NLP, Machine Learning, among others, Knowledge Graphs have rapidly gained popularity in academia and industry in the past years. The integration of such disparate disciplines and techniques give the richness to Knowledge Graphs, but also present the challenge to practitioners and theoreticians to know how current advances develop from early techniques in order, on one hand, take full advantage of them, and on the other, avoid reinventing the wheel. This tutorial will provide a historical context on the roots of Knowledge Graphs grounded in the advancements of Logic, Data and the combination thereof.

Tutors:

Juan F. Sequeda; Claudio Gutierrez

Fairness in Unsupervised Learning

🕒 3:00pm - 6:00pm, Oct 19

📍 Galway

Tutorials

Data in digital form is expanding at an exponential rate, far outpacing any chance of getting any significant fraction labelled manually. This has resulted in heightened research emphasis on unsupervised learning, learning in the absence of labels. In fact, unsupervised learning has been often dubbed as the next frontier of AI. Unsupervised learning is the only plausible model to analyze the bulk of passively collected data that spans across various domains; e.g., social media footprints, safety/surveillance cameras, IoT devices, sensors, smartphone apps, medical wearables, traffic sensing devices and public wi-fi access. While fairness in supervised learning, such as classification tasks, has inspired a large amount of research in the past few years, work on fair unsupervised learning has been relatively slow in picking up. This tutorial targets to provide an overview of: (i) fairness principles drawing abundantly from political philosophy placed within the backdrop of motivating scenarios from unsupervised learning, (ii) current research in fair algorithms for unsupervised learning, and (iii) new directions to extend the state-of-the-art in fair unsupervised learning. While we intend to broadly cover all tasks in unsupervised learning, our focus will be on clustering, retrieval and representation learning. In a unique departure from conventional data science tutorials, we will place significant emphasis on presenting and debating pertinent literature from ethics and philosophy. Overall, there will be a strong emphasis on ensuring strong interdisciplinarity, with the instructor team having expertise in both computer science and political philosophy.

We start the tutorial with an introduction followed by a set of motivating unsupervised analytics scenarios which illustrate the need for addressing fairness considerations. Next, we will outline several principles of fairness which will include streams explored in ML literature (e.g., individual and group fairness), as well as popular notions of fairness within political philosophy, chiefly, Rawlsian fairness and several notions within the Rawlsian family. This will be followed by analyzing classical unsupervised learning algorithms from the perspective of fairness, as well as a reasonably comprehensive review of fair unsupervised learning algorithms. We will then outline several interesting directions for future work, targeted at young researchers in the audience who may be interested in embarking on fair ML research.

Tutors:

Deepak P; Joemon M. Jose; Sanil V

3rd Workshop Advances in Interpretable ML and AI (AIMLAI) - Part 1

🕒 3:00pm - 8:00pm, Oct 19

📍 Dublin

Workshops

Recent technological advances rely on accurate decision support systems that can be perceived as black boxes due to their overwhelming complexity. This lack of transparency can lead to technical, ethical, legal, and trust issues. For example, if the control module of a self-driving car failed at detecting a pedestrian, it becomes crucial to know why the system erred. In some other cases, the decision system may reflect unacceptable biases that can generate distrust. The General Data Protection Regulation (GDPR), approved by the European Parliament in 2018, suggests that individuals should be able to obtain explanations of the decisions made from their data by automated processing, and to challenge those decisions. All these reasons have given rise to the domain of interpretable AI. AIMLAI (Advances in Interpretable Machine Learning and Artificial Intelligence) aims at gathering researchers, experts and professionals, from inside and outside the domain of AI, interested in the topic of interpretable ML and interpretable AI. The workshop encourages interdisciplinary collaborations, with particular emphasis in knowledge management, infovis, human computer interaction and psychology. It also welcomes applied research for use cases where interpretability matters.

Workshop Chairs:

Adrien, Bibal, University of Namur, Belgium

Tassadit, Bouadi, University of Rennes I, France

Benoît, Frénay, University of Namur, Belgium

Luis, Galárraga, Inria, France

José, Oramas, University of Antwerp, Belgium

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adequate design of search or recommender systems and training tools. Search as Learning (SAL) research examines relationships between querying, navigation, and reading behavior during Web search and the resulting learning outcomes, and how they can be measured, predicted, and supported.

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Ran Yu, Leibniz Institute for the Social Sciences (GESIS), Cologne, Germany

Yvonne Kammerer, Leibniz-Institut für Wissensmedien (IWM), Tübingen, Germany / Open Universiteit, Heerlen, The Netherlands

Ladislao Salmerón, University of Valencia, Department of Developmental and Educational Psychology, Research Unit on Reading (ERI Lectura), Valencia, Spain

1st Workshop Semantic and Knowledge Graph Advances for Journalism

🕒 3:00pm - 8:00pm, Oct 19

📍 Kilkenny

Workshops

A massive amount of news information is being shared online every day by individuals and media companies. It is difficult for a human to deal with this large-scale data without computational support. Knowledge Graphs (KGs) are emerging as a representation infrastructure to support the organisation, integration and representation of journalistic content. KGs are used in numerous applications such as search, question answering, recommendation systems, data integration and across diverse application domains such as geosciences, healthcare, finance, e-commerce, oil and gas, creative industries and cultural heritage. In recent years, KGs have started to emerge in the journalism domain and it was, for example, the technology being used for processing the Panama papers¹. The goal of this workshop is to look at the recent development in the use of KGs in journalism and also to discuss the main challenges to the adaptation of this technology. Moreover, the workshop aims to cover both technological and scientific aspects related to KGs as well as practical deployment and commercial exploitation. Specifically, the workshop will focus on four different aspects: i) journalism KGs generation, enrichment, and evaluation; ii) ontologies & linked open data for journalism; iii) techniques and applications of KGs; iv) and mining journalism KGs. This workshop is an excellent chance to inspire experts and researchers to share theoretical and practical knowledge of the various aspects related to KGs applications for journalism and to help them convert their ideas into the innovations of the future.

Workshop Chairs:

Tareq Al-Moslmi, University of Bergen, Norway

Andre Freitas, The University of Manchester, UK

Raphael Troncy, EURECOM, France

Davide Ceolin, Centrum Wiskunde & Informatica, The Netherlands

Abdullatif Abolohom, University of Beira Interior, Portugal

5th International Workshop Mining Actionable Insights from Social Networks (MAISoN 2020) - Part 1

🕒 3:00pm - 8:00pm, Oct 19

📍 Athlone

Workshops

The MAISoN workshop on Mining Actionable Insights from Social Networks is a yearly event, now approaching its 5th edition. For this edition, we plan to run a special edition of the workshop with focus on dis/misinformation mining from social networks at CIKM 2020, which will take place at Galway, Ireland. We believe this is especially timely and will definitely attract a lot of interest from the community because of the Coronavirus virus (COVID-19) epidemic, misinformation has been spreading over social networks rapidly. The need to consider misinformation on social networks is becoming ever more pertinent and relevant.

The aim of this special edition is to bring together researchers from different disciplines interested in mining dis/misinformation on social networks. In particular, the goal is to discuss research that goes beyond descriptive analysis of social media data or incremental algorithmic improvements on synthetic or existing datasets. Instead, the distinguishing focus of this special edition is its emphasis on techniques that use social network data for building diagnostic, predictive and prescriptive analysis models related to misinformation. This means that there is rigorous attention for techniques that can be used to understand how and why dis/misinformation is created and spread, to uncover hidden and unexpected aspects of dis/misinformation content, and to recommend insightful countermeasures to restrict the circulation of dis/misinformation and alleviate their negative effects.

Workshop Chairs:

Ebrahim Bagheri, Ryerson University, Toronto, Canada

Huan Liu, Arizona State University, Arizona, United States

Kai Shu, Arizona State University, Arizona, United States

Fattane Zarrinkalam, Ryerson University, Toronto, Canada

5:00pm

Mining User Interests from Social Media

🕒 5:00pm - 8:00pm, Oct 19

📍 Sligo

Tutorials

The abundance of user generated content on social media provides the opportunity to build models that are able to accurately and effectively extract, mine and predict users' interests with the hopes of enabling more effective user engagement, better quality delivery of appropriate services and higher user satisfaction. While traditional methods for building user profiles relied on AI-based preference elicitation techniques that could have been considered to be intrusive and undesirable by the users, more recent advances are focused on a non-intrusive yet accurate way of determining users' interests and preferences. In this tutorial, we will cover five important aspects related to the effective mining of user interests: 1) The information sources that are used for extracting user interests; 2) Various types of user interest profiles that have been proposed in the literature; 3) Techniques that have been adopted or proposed for mining user interests, 4) The scalability and resource requirements of the state of the art methods; 5) The evaluation methodologies that are adopted in the literature for validating the appropriateness of the mined user interest profiles. We will also introduce existing challenges, open research question and exciting opportunities for further work.

Tutors:

Fattane Zarrinkalam; Guangyuan Piao; Stefano Faralli; Ebrahim Bagheri

Tue, Oct 20, 2020

6:00am

Network Alignment: Recent Advances and Future Directions

🕒 6:00am - 9:00am, Oct 20

📍 Limerick

Tutorials

In the era of big data, networks are often from multiple sources such as the social networks of diverse platforms (e.g., Facebook, Twitter), protein-protein interaction (PPI) networks of different tissues, transaction networks at multiple financial institutes and knowledge graphs derived from a variety of knowledge bases (e.g., DBpedia, Freebase, etc.). The very first step before exploring insights from these multi-sourced networks is to integrate and unify different networks. In general, network alignment is such a task that aims to uncover the correspondences among nodes across different graphs. The challenges of network alignment include: (1) the heterogeneity of the multi-sourced networks, e.g., different structural patterns, (2) the variety of the real-world networks, e.g., how to leverage the rich contextual information, and (3) the computational complexity. The goal of this tutorial is to provide a comprehensive overview of the recent advances in network alignment, and (2) identify the open challenges and future trends. We believe this can be beneficial to numerous application problems, and attract both researchers and practitioners from both data mining area and other interdisciplinary areas. In particular, we start with

introducing the backgrounds, problem definition and key challenges of network alignment. Next, our emphases will be on (1) the recent techniques on addressing network alignment problem and other related problems with a careful balance between the algorithms and applications, and (2) the open challenges and future trends.

Tutors:

Si Zhang; Hanghang Tong

Introduction to Computer Vision and Realtime Deep Learning-based Object Detection

🕒 6:00am - 9:00am, Oct 20

📍 Galway

Tutorials

Computer vision (CV) is a field of artificial intelligence that trains computers to interpret and understand the visual world for a variety of exciting downstream tasks such as self-driving cars, checkout-less shopping, smart cities, cancer detection, and more. The field of CV has been revolutionized by deep learning over the last decade. This tutorial looks under the hood of modern day CV systems, and builds out some of these tech pipelines in a Jupyter Notebook using Python, OpenCV, Keras and Tensorflow. While the primary focus is on digital images from cameras and videos, this tutorial will also introduce 3D point clouds, and classification and segmentation algorithms for processing them.

More concretely, we will briefly overview the basics of computer vision, and object detection, progressing from object detection's earlier attempts based on dense multiscale sliding windows of Histogram of Oriented Gradients (HOG) features in conjunction with support vector machine classifiers, to modern day pipelines based upon deep fully convolutional neural networks (FCNN). These modern day pipelines are based on complex FCNN architectures (often 50-60 layers deep), multi-task loss functions, and are either two-stage (e.g., Faster R-CNN) or single-stage (e.g., YOLO/SSD) in nature. Recent revolutionary architectures such as the DETection TRansformer (DETR) will also be presented. Core concepts will be demonstrated with examples, code, and exercises. This will culminate with a demonstration (and a challenge) on how to build, train, and evaluate computer vision applications with a primary focus on building an object detection application from scratch to detect logos in images/video.

Tutors:

James Shanahan

3rd International Workshop Entity Retrieval and Learning (EYRE)

🕒 6:00am - 11:00am, Oct 20

📍 Waterford

Workshops

The intention of over half of Web queries is to find a particular entity, or entities of a particular type. Entities and structured representations (i.e., knowledge graphs) became popular in the recent past and hence, tremendous interest is in this area at the moment. Beyond the traditional text-based retrieval and learning problems, the recent surge in entity-centered structured data on the Web like Wikidata and progress in deep and machine learning techniques enable more powerful entity-centered solutions, but also bring new challenges. The hybrid exploitation of unstructured and structured data and their use in experiments ranging from traditional machine learning to advanced deep learning techniques have led to diversified involvement of researchers and practitioners in the areas of IR, Database, Semantic Web, and Machine and Deep Learning. There is a demand for a platform where interdisciplinary studies of entity retrieval and learning can be presented, and focused discussions can take place. Therefore, a workshop on entity retrieval and learning is proposed.

Workshop Chairs:

Gong Cheng, Nanjing University, China

Kalpa Gunaratna, Samsung Research America, USA

Jun Wang, University College London, UK

3rd Workshop on Knowledge-driven Analytics and Systems Impacting Human Quality of Life (KDAH-CIKM-2020)

🕒 6:00am - 11:00am, Oct 20

📍 Kilkenny

Workshops

Technology disruption through knowledge driven intelligent systems is gradually controlling human life. Management of the knowledge-driven artificial intelligence- based technologies is of highest importance to maximize its progressive influence on human life and human society. Social network affinity, technology-abuse negatively affect our physical, emotional, social and mental health. Conversely, intelligent systems have the capability to bring positive impact on human life. This workshop will bring forward those positive applications and technologies as well as the path towards transformation of intelligent systems that minimize the negative impacts. The intended thrust is to promote the development of human-centric intelligent technologies like precise and personalized medication and prognosis prediction, improved elderly care, minimizing private data theft, knowledge-driven energy and resource management, deep learning and artificial intelligence-based applications for risk prediction and augmented human capability generation and related others. This workshop aims to bring research outcomes and insights that demonstrate the knowledge-driven technologies, developments, applications for ensuring improvement of human quality of life. The impact would be micro-level, where human life gets impacted in daily basis and at macro-level where human life would be impacted in long term with pronounced influence on the betterment to human society.

Workshop Chairs:

Leandro Marin, University of Murcia, Spain

John Farserotu, Centre Suisse d'Electronique et de Microtechnique (CSEM), Switzerland

Antonio Jara, University of Applied Sciences Western Switzerland (HES-SO), Switzerland

Arijit Ukil, Research and Innovation, Tata Consultancy Services, India

7:00am

Opening

🕒 7:00am - 7:20am, Oct 20

📍 Sligo

Doctoral Consortium

Session Chairs: Gianluca Demartini

7:20am

Data Mining

🕒 7:20am - 8:50am, Oct 20

📍 Sligo

Doctoral Consortium

Session Chairs: Gianluca Demartini

4 Subsessions

● **Approximate Event Pattern Matching over Heterogeneous and Dirty Sources**

🕒 7:20am - 7:40am, Oct 20

● **Synthesis of Dependent Multichannel ECG using Generative Adversarial Networks**

🕒 7:40am - 8:00am, Oct 20

● **Some Issues for Location Dependent Information System's Query in Mobile Environment**

🕒 8:00am - 8:20am, Oct 20

● **Break**

🕒 8:20am - 8:50am, Oct 20

8:00am

Multi-Model Data Query Languages and Processing Paradigms

🕒 8:00am - 11:00am, Oct 20

📍 Dublin

Tutorials

Numerous data models were proposed for practical purposes, which pose a great challenge for big data management. Specifying a database query using a formal query language is a typically challenging task. In the context of the multi-model data, this problem becomes even harder because it requires the users to deal with data of different types. It usually lacks a unified schema to help the users issuing their queries, or have an incomplete schema as data come from disparate sources. Multi-Model DataBases (MMDBs) have been developed to facilitate the management of multi-model data. In this tutorial we offer a comprehensive presentation of a wide range of multi-model data query languages and to make a comparison of their key properties. The tutorial also offer the participants hands-on experience in issuing queries over MMDBs. In addition, we also address the essence of multi-model query processing and provide insights on the research challenges and directions for future work.

Tutors:

Qingsong Guo; Jiaheng Lu

8:50am

IR/NLP

🕒 8:50am - 10:50am, Oct 20

📍 Sligo

Doctoral Consortium

Session Chairs: Gianluca Demartini

5 Subsessions

- **Controlling Patent Text Generation by Structural Metadata**
🕒 8:50am - 9:10am, Oct 20
- **Neural (Knowledge Graph) Question Answering using Synthetic Training Data**
🕒 9:10am - 9:30am, Oct 20
- **Automatic contextual storytelling in a natural language corpus**
🕒 9:30am - 9:50am, Oct 20
- **Break**
🕒 9:50am - 10:10am, Oct 20
- **Generating Clarifying Questions in Conversational Search Systems**
🕒 10:10am - 10:30am, Oct 20

9:00am

9th International Symposium "From Data to Models and Back" (DataMod) - Part 1

🕒 9:00am - 12:00pm, Oct 20

📍 Cork

Workshops

DataMod 2020 aims to bring together practitioners and researchers from academia, industry and research institutions interested in the combined application of data-driven techniques from the areas of knowledge management, data mining and machine learning with computational modelling methods. Modelling methodologies of interest include, but are not restricted to, automata, agents, Petri nets, process algebras and rewriting systems. Application domains include social systems, ecology, biology, medicine, smart cities, governance, education, software engineering, and any other field that deals with complex systems and large amounts of data. Papers can present research results in any of the themes of interest for the symposium as well as application experiences, tools and promising preliminary ideas. Papers dealing with synergistic approaches that integrate knowledge management/discovery and modelling or that exploit knowledge management/discovery to develop/synthesise system models are especially welcome.

Workshop Chairs:

Juliana Bowles, School of Computer Science, University of St Andrews, UK

Giovanna Broccia, FMT Lab, ISTI-CNR, Italy

Dr Mirco Nanni, KDD Lab, ISTI-CNR, Italy

10:30am

Optional Discussion before Break

🕒 10:30am - 10:50am, Oct 20

📍 Sligo

Doctoral Consortium

Session Chairs: Gianluca Demartini

2:00pm

9th International Symposium "From Data to Models and Back" (DataMod) - Part 2

🕒 2:00pm - 6:00pm, Oct 20

📍 Cork

Workshops

DataMod 2020 aims to bring together practitioners and researchers from academia, industry and research institutions interested in the combined application of data-driven techniques from the areas of knowledge management, data mining and machine learning with computational modelling methods. Modelling methodologies of interest include, but are not restricted to, automata, agents, Petri nets, process algebras and rewriting systems. Application domains include social systems, ecology, biology, medicine, smart cities, governance, education, software engineering, and any other field that deals with complex systems and large amounts of data. Papers can present research results in any of the themes of interest for the symposium as well as application experiences, tools and promising preliminary ideas. Papers dealing with synergistic approaches that integrate knowledge management/discovery and modelling or that exploit knowledge management/discovery to develop/synthesise system models are especially welcome.

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3:00pm

Resume after Break and Overview

🕒 3:00pm - 3:20pm, Oct 20

📍 Sligo

Doctoral Consortium

Session Chairs: Daniel Hienert

Computational Social Science

🕒 3:00pm - 3:40pm, Oct 20

📍 Sligo

Doctoral Consortium

Session Chairs: Daniel Hienert

1 Subsessions

● Detecting and Measuring the Exposure of Children and Adolescents to Inappropriate Comments in YouTube

🕒 3:20pm - 3:40pm, Oct 20

Compression of Deep Learning Models for Text

🕒 3:00pm - 6:00pm, Oct 20

📍 Limerick

Tutorials

In recent years, the fields of NLP and information retrieval have made tremendous progress thanks to deep learning models like RNNs and LSTMs, and Transformer based models like BERT. But these models are humongous in size. Real world applications however demand small model size, low response times and low computational power wattage. We will discuss six different types of methods (pruning, quantization, knowledge distillation, parameter sharing, matrix decomposition, and other Transformer based methods) for compression of such models to enable their deployment in real industry NLP projects. Given the critical need of building applications with efficient and small models, and the large amount of recently published work in this area, we believe that this tutorial is very timely. We will organize related work done by the 'deep learning for NLP' community in the past few years and present it as a coherent story.

Tutors:

Manish Gupta; Vasudeva Varma; Sonam Damani; Kedhar Nath Narahari

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Luis, Galárraga, Inria, France

José, Oramas, University of Antwerp, Belgium

1st Workshop Combining Symbolic and Sub-symbolic Methods and their Applications (CSSA)

🕒 3:00pm - 8:00pm, Oct 20

📍 Galway

Workshops

There has been a rapid growth in the use of symbolic representations along with their applications in many important tasks. Symbolic representations, in the form of Knowledge Graphs (KGs), constitute large networks of real-world entities and their relationships. On the other hand, sub-symbolic artificial intelligence has also become an important area of research which is inspired by how information is propagated in the (human) brain. These algorithms create an artificial neural network, with nodes (called

neurons). Many studies have been proposed which focus on learning distributed representations from KGs. These KGs are generated manually or automatically by processing text or other data sources. These embedding techniques are typically based on translational, factorization, or random walk based methods. Other approaches apply neural network ideas directly onto the graph, like graph convolutional networks. These approaches have been successfully applied to Knowledge Base Completion, Link Prediction, question answering, text classification, etc. In order to pursue more advanced methodologies, it has become critical that these two communities join forces in order to develop more effective algorithms and applications.

Workshop Chairs:

Mehwish Alam, FIZ Karlsruhe – Leibniz Institute for Information Infrastructure, Germany

Paul Groth, Universiteit van Amsterdam, the Netherlands

Pascal Hitzler, Kansas State University, Manhattan, KS, U.S.A.

Heiko Paulheim, University of Mannheim, Germany

Harald Sack, FIZ Karlsruhe – Leibniz Institute for Information Infrastructure, Germany

Volker Tresp, Ludwig Maximilian University of Munich, Research Scientist Siemens, Germany

5th International Workshop Mining Actionable Insights from Social Networks (MAISoN 2020) - Part 2

🕒 3:00pm - 8:00pm, Oct 20

📍 Athlone

Workshops

The MAISoN workshop on Mining Actionable Insights from Social Networks is a yearly event, now approaching its 5th edition. For this edition, we plan to run a special edition of the workshop with focus on dis/misinformation mining from social networks at CIKM 2020, which will take place at Galway, Ireland. We believe this is especially timely and will definitely attract a lot of interest from the community because of the Coronavirus virus (COVID-19) epidemic, misinformation has been spreading over social networks rapidly. The need to consider misinformation on social networks is becoming ever more pertinent and relevant.

The aim of this special edition is to bring together researchers from different disciplines interested in mining dis/misinformation on social networks. In particular, the goal is to discuss research that goes beyond descriptive analysis of social media data or incremental algorithmic improvements on synthetic or existing datasets. Instead, the distinguishing focus of this special edition is its emphasis on techniques that use social network data for building diagnostic, predictive and prescriptive analysis models related to misinformation. This means that there is rigorous attention for techniques that can be used to understand how and why dis/misinformation is created and spread, to uncover hidden and unexpected aspects of dis/misinformation content, and to recommend insightful countermeasures to restrict the circulation of dis/misinformation and alleviate their negative effects.

Workshop Chairs:

Ebrahim Bagheri, Ryerson University, Toronto, Canada

Huan Liu, Arizona State University, Arizona, United States

Kai Shu, Arizona State University, Arizona, United States

Fattane Zarrinkalam, Ryerson University, Toronto, Canada

3:40pm

Databases

🕒 3:40pm - 4:50pm, Oct 20

📍 Sligo

Doctoral Consortium

Session Chairs: Daniel Hienert

3 Subsessions

- How the quantum-inspired framework supports keyword searches on multi-model

databases

🕒 3:40pm - 4:00pm, Oct 20

- **Tailoring Active Learning to Industrial Entity Matching**

🕒 4:00pm - 4:20pm, Oct 20

- **Break**

🕒 4:20pm - 4:50pm, Oct 20

4:50pm

Knowledge Graph/LOD

🕒 4:50pm - 5:50pm, Oct 20

📍 Sligo

Doctoral Consortium

Session Chairs: Daniel Hienert

2 Subsessions

- **Computational approaches for drug repositioning : towards a holistic perspective based on knowledge graphs**

🕒 4:50pm - 5:10pm, Oct 20

- **Embedding based Link Prediction for Knowledge Graph Completion**

🕒 5:10pm - 5:30pm, Oct 20

5:00pm

The Battle Against Online Harmful Information: The Cases of Fake News and Hate Speech

🕒 5:00pm - 8:00pm, Oct 20

📍 Waterford

Tutorials

Social media platforms have given the opportunity to users to publish content and express their opinions online in a very fast and easy way. The ease of posting content online and the anonymity of social media have increased the amount of harmful content that is published. This tutorial will focus on the detection of harmful information that is published online. In particular, the tutorial will focus on two types of harmful information, fake news and hate speech. The tutorial will start with an introduction of online harmful information including definitions and characteristics of the different types of harmful information. Then we will present and discuss different approaches that have been proposed for fake news and hate speech detection. We will also present details regarding the evaluation process, available datasets and shared evaluation tasks. The tutorial will conclude with a discussion on open issues and future directions in the field of online harmful information detection.

Tutors:

Anastasia Giachanou; Paolo Rosso

5:30pm

Closing with Optional Discussion

🕒 5:30pm - 5:50pm, Oct 20

📍 Sligo

Doctoral Consortium

Session Chairs: Daniel Hienert

Wed, Oct 21, 2020

6:00am

Introduction to CIKM

🕒 6:00am - 7:00am, Oct 21

📍 Dublin

Plenary sessions

7:00am

Urban computing: traffic and passenger flows

🕒 7:00am - 8:42am, Oct 21

📍 Dublin

Research Track Long Papers

Session Chairs: Suzanne Little

6 Subsessions

- **ST-GRAT: A Spatio-Temporal Graph Attention Network for Traffic Forecasting**
🕒 7:00am - 7:17am, Oct 21
- **Deep Graph Convolutional Networks for Incident-driven Traffic Speed Prediction**
🕒 7:17am - 7:34am, Oct 21
- **STP-TrellisNets: Spatial-Temporal Parallel TrellisNets for Metro Station Passenger Flow Prediction**
🕒 7:34am - 7:51am, Oct 21
- **Spatiotemporal Adaptive Gated Graph Convolution Network for Urban Traffic Flow Forecasting**
🕒 7:51am - 8:08am, Oct 21
- **Spatial-Temporal Convolutional Graph Attention Networks for Citywide Traffic Flow Forecasting**
🕒 8:08am - 8:25am, Oct 21
- **Short Break**
🕒 8:25am - 8:42am, Oct 21

Entities and relations

🕒 7:00am - 8:42am, Oct 21

📍 Cork

Research Track Long Papers

Session Chairs: Gianluca Demartini

6 Subsessions

- **Relational Reflection Entity Alignment**
🕒 7:00am - 7:17am, Oct 21
- **Generating Categories for Sets of Entities**
🕒 7:17am - 7:34am, Oct 21
- **Cross-sentence N-ary Relation Extraction using Entity Link and Discourse Relation**
🕒 7:34am - 7:51am, Oct 21
- **Meta-Learning for Neural Relation Classification with Distant Supervision**
🕒 7:51am - 8:08am, Oct 21
- **MICK: A Meta-Learning Framework for Few-shot Relation Classification with Small**

Training Data

🕒 8:08am - 8:25am, Oct 21

- **Short Break**

🕒 8:25am - 8:42am, Oct 21

Knowledge graphs I

🕒 7:00am - 8:42am, Oct 21

📍 Limerick

Research Track Long Papers

Session Chairs: Paolo Ceravolo

6 Subsessions

- **Rotate3D: Representing Relations as Rotations in Three-Dimensional Space for Knowledge Graph Embedding**
🕒 7:00am - 7:17am, Oct 21
- **How and Why is An Answer (Still) Correct? Maintaining Provenance in Dynamic Knowledge Graphs**
🕒 7:17am - 7:34am, Oct 21
- **Towards Temporal Knowledge Graph Embeddings with Arbitrary Time Precision**
🕒 7:34am - 7:51am, Oct 21
- **Knowledge Graph Embedding Preserving Soft Logical Regularity**
🕒 7:51am - 8:08am, Oct 21
- **Multi-modal Knowledge Graphs for Recommender Systems**
🕒 8:08am - 8:25am, Oct 21
- **Short Break**
🕒 8:25am - 8:42am, Oct 21

Urban computing I

🕒 7:00am - 8:42am, Oct 21

📍 Galway

Research Track Long Papers

Session Chairs: Flora Salim

6 Subsessions

- **GeneraLight: Improving Environment Generalization of Traffic Signal Control via Meta Reinforcement Learning**
🕒 7:00am - 7:17am, Oct 21
- **Cooperative Multi-Agent Reinforcement Learning in Express System**
🕒 7:17am - 7:34am, Oct 21
- **Knowledge Adaption for Demand Prediction based on Multi-task Memory Neural Network**
🕒 7:34am - 7:51am, Oct 21
- **EnDeA: Ensemble based Decoupled Adversarial Learning for Identifying Infrastructure Damage during Disasters**
🕒 7:51am - 8:08am, Oct 21
- **RelSen: An Optimization-based Framework for Simultaneously Sensor Reliability**

Monitoring and Data Cleaning

🕒 8:08am - 8:25am, Oct 21

● Short Break

🕒 8:25am - 8:42am, Oct 21

Spatio-temporal analytics

🕒 7:00am - 10:00am, Oct 21

📍 Waterford

Research Track Short Papers

Session Chairs: Yang Yang

6 Subsessions

● Modelling Regional Crime Risk using Directed Graph of Check-ins

🕒 7:00am - 7:13am, Oct 21

● Event-Driven Network for Cross-Modal Retrieval

🕒 7:13am - 7:26am, Oct 21

● DATSING: Data Augmented Time Series Forecasting with Adversarial Domain Adaptation

🕒 7:26am - 7:39am, Oct 21

● Seasonal-Periodic Subgraph Mining in Temporal Networks

🕒 7:39am - 7:52am, Oct 21

● Time-aware Graph Relational Attention Network for Stock Recommendation

🕒 7:52am - 8:05am, Oct 21

● A reproducibility study of deep and surface machine learning methods for human-related trajectory prediction

🕒 8:05am - 8:18am, Oct 21

News

🕒 7:00am - 8:59am, Oct 21

📍 Kilkenny

Resource Track

Session Chairs: Maria Maistro

7 Subsessions

● CC-News-En: A Large English Newswire Corpus

🕒 7:00am - 7:17am, Oct 21

● A Multidimensional Dataset for Analyzing and Detecting News Bias based on Crowdsourcing

🕒 7:17am - 7:34am, Oct 21

● TweetsCOVID-19 - A Knowledge Base of Semantically Annotated Tweets about the COVID-19 Pandemic

🕒 7:34am - 7:51am, Oct 21

● CauseNet: Towards a Causality Graph Extracted from the Web

🕒 7:51am - 8:08am, Oct 21

● A Dataset of Journalists' Interactions With Their Readership: When Should Article Authors Reply to Reader Comments?

🕒 8:08am - 8:25am, Oct 21

- **The Newspaper Navigator Dataset: Extracting Headlines and Visual Content From 16 Million Historic Newspaper Pages in Chronicling America**
🕒 8:25am - 8:42am, Oct 21
- **ReCOvery: A Multimodal Repository for COVID-19 News Credibility Research**
🕒 8:42am - 8:59am, Oct 21

User Behaviour

🕒 7:00am - 10:00am, Oct 21

📍 Athlone

Applied Research Track

Session Chairs: Jimi Shanahan

11 Subsessions

- **Deep Behavior Tracing with Multi-level Temporality Preserved Embedding**
🕒 7:00am - 7:17am, Oct 21
- **Match Tracing: A Unified Framework for Real-time Win Prediction and Quantifiable Performance Evaluation**
🕒 7:17am - 7:34am, Oct 21
- **aDMSCN: A Novel Perspective for User Intent Prediction in Customer Service Bots**
🕒 7:34am - 7:51am, Oct 21
- **MiNet: Mixed Interest Network for Cross-Domain Click-Through Rate Prediction**
🕒 7:51am - 8:08am, Oct 21
- **Masked-field Pre-training for User Intent Prediction**
🕒 8:08am - 8:25am, Oct 21
- **A Deep Prediction Network for Understanding Advertiser Intent and Satisfaction**
🕒 8:25am - 8:42am, Oct 21
- **Intent-Driven Similarity in E-Commerce Listings**
🕒 8:42am - 8:59am, Oct 21
- **Learning to Build User-tag Profile in Recommendation System**
🕒 8:59am - 9:16am, Oct 21
- **Learning to Profile: User Meta-Profile Network for Few-Shot Learning**
🕒 9:16am - 9:33am, Oct 21
- **Prospective Modeling of Users for Online Display Advertising via Deep Time-Aware Model**
🕒 9:33am - 9:50am, Oct 21
- **Short Break**
🕒 9:50am - 10:00am, Oct 21

8:42am

Question answering and dialogue systems I

🕒 8:42am - 10:00am, Oct 21

📍 Dublin

Research Track Long Papers

Session Chairs: Mark Sanderson

5 Subsessions

- **Learning to Detect Relevant Contexts and Knowledge for Response Selection in Retrieval-based Dialogue Systems**
🕒 8:42am - 8:59am, Oct 21
- **Query-to-Session Matching: Do NOT Forget History and Future during Response Selection for Multi-Turn Dialogue Systems**
🕒 8:59am - 9:16am, Oct 21
- **Opinion-aware Answer Generation for Review-driven Question Answering in E-Commerce**
🕒 9:16am - 9:33am, Oct 21
- **Providing Direct Answers in Search Results: A Study of User Behavior**
🕒 9:33am - 9:50am, Oct 21
- **Hierarchical Query Graph Generation for Complex Question Answering over Knowledge Graph**
🕒 9:50am - 10:00am, Oct 21

Understanding, interpretability and explainability

🕒 8:42am - 10:00am, Oct 21

📍 Cork

Research Track Long Papers

Session Chairs: Marie-Christine Rousset

5 Subsessions

- **QSAN: A Quantum-probability based Signed Attention Network for Explainable False Information Detection**
🕒 8:42am - 8:59am, Oct 21
- **Shapley Values and Meta-Explanations for Probabilistic Graphical Model Inference**
🕒 8:59am - 9:16am, Oct 21
- **Generating Neural Template Explanations for Recommendation**
🕒 9:16am - 9:33am, Oct 21
- **GNNVis: Visualize Large-Scale Data by Learning a Graphical Neural Network Representation**
🕒 9:33am - 9:50am, Oct 21
- **Do People and Neural Networks Pay Attention to the Same Words? Studying Eye-tracking Data for Non-factoid QA Evaluation**
🕒 9:50am - 10:00am, Oct 21

Personalization

🕒 8:42am - 10:00am, Oct 21

📍 Limerick

Research Track Long Papers

Session Chairs: Amin Anjomshoaa

5 Subsessions

- **Logical Structure Representation Learning with Graph Embedding for Personalized Product Search**

🕒 8:42am - 8:59am, Oct 21

● **Personalized Re-ranking with Item Relationships for E-commerce**

🕒 8:59am - 9:16am, Oct 21

● **PSTIE: Time Information Enhanced Personalized Search**

🕒 9:16am - 9:33am, Oct 21

● **Knowledge-Enhanced Personalized Review Generation with Capsule Graph Neural Network**

🕒 9:33am - 9:50am, Oct 21

● **Short Break**

🕒 9:50am - 10:00am, Oct 21

Recommendation I

🕒 8:42am - 10:00am, Oct 21

📍 Galway

Research Track Long Papers

Session Chairs: Jun Xu

5 Subsessions

● **AutoFeature: Searching for Feature Interactions and Their Architectures for Click-through Rate Prediction**

🕒 8:42am - 8:59am, Oct 21

● **Deep Time-Aware Item Evolution Network for Click-Through Rate Prediction**

🕒 8:59am - 9:16am, Oct 21

● **Exploring Missing Interactions: A Convolutional Generative Adversarial Network for Collaborative Filtering**

🕒 9:16am - 9:33am, Oct 21

● **Hybrid Sequential Recommender via Time-aware Attentive Memory Network**

🕒 9:33am - 9:50am, Oct 21

● **Star Graph Neural Networks for Session-based Recommendation**

🕒 9:50am - 10:00am, Oct 21

8:59am

Potpourri

🕒 8:59am - 10:00am, Oct 21

📍 Kilkenny

Resource Track

Session Chairs: Hossein Fani

4 Subsessions

● **GeoFlink: A Distributed and Scalable Framework for the Real-time Processing of Spatial Streams**

🕒 8:59am - 9:16am, Oct 21

● **Web Page Segmentation Revisited: Evaluation Framework and Dataset**

🕒 9:16am - 9:33am, Oct 21

● **MAEC: A Multimodal Aligned Earnings Conference Call Dataset for Financial Risk Prediction**

🕒 9:33am - 9:50am, Oct 21

● **Short break**

🕒 9:50am - 10:00am, Oct 21

9:00am

CIKMConnect A

🕒 9:00am - 10:00am, Oct 21

📍 Sligo

CIKMConnect

Session Chairs: Mathieu d'Aquin

2 Subsessions

● **Avaya: Customer and Employee Experiences: Past, Present and Future**

🕒 9:00am - 9:30am, Oct 21

● **Genesys: Building AI products**

🕒 9:30am - 10:00am, Oct 21

10:00am

Keynote Talk: Michel Dumontier

🕒 10:00am - 11:00am, Oct 21

📍 Dublin

Keynote talks

Accelerating Discovery Science with an Internet of FAIR Data and Services

Biomedicine has always been a fertile and challenging domain for computational discovery science. Indeed, the existence of millions of scientific articles, thousands of databases, and hundreds of ontologies, offer exciting opportunities to reuse our collective knowledge, were we not stymied by incompatible formats, overlapping and incomplete vocabularies, unclear licensing, and heterogeneous access points. In this talk, I will discuss our work to create computational standards, platforms, and methods to wrangle knowledge into simple, but effective representations based on semantic web technologies that are maximally FAIR – Findable, Accessible, Interoperable, and Reuseable – and to further use these for biomedical knowledge discovery. But only with additional crucial developments will this emerging Internet of FAIR data and services enable automated scientific discovery on a global scale.

3:00pm

Keynote Talk: Michel Dumontier (from recording)

🕒 3:00pm - 4:00pm, Oct 21

📍 Dublin

Keynote talks

Accelerating Discovery Science with an Internet of FAIR Data and Services

Biomedicine has always been a fertile and challenging domain for computational discovery science. Indeed, the existence of millions of scientific articles, thousands of databases, and hundreds of ontologies, offer exciting opportunities to reuse our collective knowledge, were we not stymied by incompatible formats, overlapping and incomplete vocabularies, unclear licensing, and heterogeneous access points. In this talk, I will discuss our work to create computational standards, platforms, and methods to wrangle knowledge into simple, but effective representations based on semantic web technologies that are maximally FAIR – Findable, Accessible, Interoperable, and Reuseable – and to further use these for biomedical knowledge discovery. But only with additional crucial developments will this emerging Internet of FAIR data and services enable automated scientific discovery on a global scale.

4:00pm

E-Commerce and advertising

🕒 4:00pm - 5:42pm, Oct 21

📍 Dublin

Research Track Long Papers

Session Chairs: Andrea Papenmeier

6 Subsessions

- **E-Commerce Dispute Resolution Prediction**
🕒 4:00pm - 4:17pm, Oct 21
- **Negative Confidence-Aware Weakly Supervised Binary Classification for Effective Review Helpfulness Classification**
🕒 4:17pm - 4:34pm, Oct 21
- **E-commerce Recommendation with Weighted Expected Utility**
🕒 4:34pm - 4:51pm, Oct 21
- **Product Quality Prediction with Convolutional Encoder-Decoder Architecture and Transfer Learning**
🕒 4:51pm - 5:08pm, Oct 21
- **CAFE: Coarse-to-Fine Knowledge Graph Reasoning for E-Commerce Recommendation**
🕒 5:08pm - 5:25pm, Oct 21
- **Short Break**
🕒 5:25pm - 5:42pm, Oct 21

Social networks

🕒 4:00pm - 5:42pm, Oct 21

📍 Cork

Research Track Long Papers

Session Chairs: Paolo Cappellari

6 Subsessions

- **Social Factors in Closed-Network Content Consumption**
🕒 4:00pm - 4:17pm, Oct 21
- **Trapping Malicious Crawlers in Social Networks**
🕒 4:17pm - 4:34pm, Oct 21
- **Fusing Parallel Social Contexts within Flexible-Order Proximity for Microblog Topic Detection**
🕒 4:34pm - 4:51pm, Oct 21
- **FANG: Leveraging Social Context for Fake News Detection Using Graph Representation**
🕒 4:51pm - 5:08pm, Oct 21
- **MERL: Multi-View Edge Representation Learning in Social Networks**
🕒 5:08pm - 5:25pm, Oct 21
- **Short Break**
🕒 5:25pm - 5:42pm, Oct 21

Recommendation II

🕒 4:00pm - 5:59pm, Oct 21

📍 Limerick

Research Track Long Papers

Session Chairs: Charles Clarke

7 Subsessions

- **Critically Examining the Claimed Value of Convolutions over User-Item Embedding Maps for Recommender Systems**
🕒 4:00pm - 4:17pm, Oct 21
- **Explainable Recommender Systems via Resolving Learning Representations**
🕒 4:17pm - 4:34pm, Oct 21
- **Live Multi-Streaming and Donation Recommendations via Coupled Donation-Response Tensor Factorization**
🕒 4:34pm - 4:51pm, Oct 21
- **Quaternion-based self-Attentive Long Short-term User Preference Encoding for Recommendation**
🕒 4:51pm - 5:08pm, Oct 21
- **A Topic and Concept Integrated Model for Thread Recommendation in Online Health Communities**
🕒 5:08pm - 5:25pm, Oct 21
- **Whole-Chain Recommendations**
🕒 5:25pm - 5:42pm, Oct 21
- **Short Break**
🕒 5:42pm - 5:59pm, Oct 21

Knowledge graphs II

🕒 4:00pm - 5:59pm, Oct 21

📍 Galway

Research Track Long Papers

Session Chairs: Maria-Esther Vidal

7 Subsessions

- **VN Network: Embedding Newly Emerging Entities with Virtual Neighbors**
🕒 4:00pm - 4:17pm, Oct 21
- **NagE: Non-Abelian Group Embedding for Knowledge Graphs**
🕒 4:17pm - 4:34pm, Oct 21
- **Incremental and Parallel Computation of Structural Graph Summaries for Evolving Graphs**
🕒 4:34pm - 4:51pm, Oct 21
- **Top-k Graph Summarization on Hierarchical DAGs**
🕒 4:51pm - 5:08pm, Oct 21
- **Efficient Knowledge Graph Validation via Cross-Graph Representation Learning**
🕒 5:08pm - 5:25pm, Oct 21
- **Laconic Image Classification: Human vs. Machine Performance**
🕒 5:25pm - 5:42pm, Oct 21
- **Short Break**

🕒 5:42pm - 5:59pm, Oct 21

Search & Ranking 1

🕒 4:00pm - 5:44pm, Oct 21

📍 Waterford

Research Track Short Papers

Session Chairs: Bernardo Pereira Nunes

8 Subsessions

- **Transformer Models for Recommending Related Questions in Web Search**
🕒 4:00pm - 4:13pm, Oct 21
- **CGTR: Convolution Graph Topology Representation for Document Ranking**
🕒 4:13pm - 4:26pm, Oct 21
- **Diversifying Top-k Point-of-Interest Queries via Collective Social Reach**
🕒 4:26pm - 4:39pm, Oct 21
- **Distant supervision in BERT-based Adhoc Document Retrieval**
🕒 4:39pm - 4:52pm, Oct 21
- **FDCM: Towards Balanced and Generalizable Concept-based Models for Effective Medical Ranking**
🕒 4:52pm - 5:05pm, Oct 21
- **Ranking Clarification Questions via Natural Language Inference**
🕒 5:05pm - 5:18pm, Oct 21
- **Automatic Gaussian Process Model Retrieval for Big Data**
🕒 5:18pm - 5:31pm, Oct 21
- **Short Break**
🕒 5:31pm - 5:44pm, Oct 21

Graphs

🕒 4:00pm - 4:51pm, Oct 21

📍 Kilkenny

Resource Track

Session Chairs: Stefan Heindorf

3 Subsessions

- **An API oriented open-source Python framework for unsupervised learning on graphs**
🕒 4:00pm - 4:17pm, Oct 21
- **Little Ball of Fur: A Python Library for Graph Sampling**
🕒 4:17pm - 4:34pm, Oct 21
- **Argo Lite: Open-Source Interactive Graph Exploration and Visualization in Browsers**
🕒 4:34pm - 4:51pm, Oct 21

AI Applications I

🕒 4:00pm - 6:50pm, Oct 21

📍 Athlone

Applied Research Track

Session Chairs: Omar Alonso

10 Subsessions

- **Expert-in-the-loop AI for Polymer Discovery**
🕒 4:00pm - 4:17pm, Oct 21
- **Loan Default Analysis with Multiplex Graph Learning**
🕒 4:17pm - 4:34pm, Oct 21
- **Community Mitigation: A Data-driven System for COVID-19 Risk Assessment in a Hierarchical Manner**
🕒 4:34pm - 4:51pm, Oct 21
- **An extensive investigation on Machine Learning techniques for apnea screening**
🕒 4:51pm - 5:08pm, Oct 21
- **Imbalanced Time Series Classification for Flight Data Analyzing with Nonlinear Granger Causality Learning**
🕒 5:08pm - 5:25pm, Oct 21
- **Fine-Tuned Compressed Representations of Vessel Trajectories**
🕒 5:25pm - 5:42pm, Oct 21
- **A Joint Inverse Reinforcement Learning and Deep Learning Model for Drivers' Behavioral Prediction**
🕒 5:42pm - 5:59pm, Oct 21
- **FairScale: A Scalable Framework for Measuring Fairness in AI Applications**
🕒 5:59pm - 6:16pm, Oct 21
- **Price Forecast with High-Frequency Finance Data: An Autoregressive Recurrent Neural Network Model with Technical Indicators**
🕒 6:16pm - 6:33pm, Oct 21
- **Incorporating User Feedback into Sequence to Sequence Model Training**
🕒 6:33pm - 6:50pm, Oct 21

CIKMConnect B

🕒 4:00pm - 7:00pm, Oct 21

📍 Sligo

CIKMConnect

Session Chairs: Mathieu d'Aquin

5 Subsessions

- **Avaya: Customer and Employee Experiences: Past, Present and Future**
🕒 4:00pm - 4:30pm, Oct 21
- **Genesys: Building AI products**
🕒 4:30pm - 5:00pm, Oct 21
- **The Insight SFI Research Centre for Data Analytics**
🕒 5:00pm - 5:30pm, Oct 21
- **The GESIS Research Institute and L3S Research Centre**
🕒 5:30pm - 6:00pm, Oct 21
- **Discussion**
🕒 6:00pm - 7:00pm, Oct 21

4:51pm

Knowledge Graphs

🕒 4:51pm - 7:07pm, Oct 21

📍 Kilkenny

Resource Track

Session Chairs: Vito Walter Anelli

8 Subsessions

- **Event-QA: A Dataset for Event-Centric Question Answering over Knowledge Graphs**
🕒 4:51pm - 5:08pm, Oct 21
- **GeoLink Cruises: A Non-Synthetic Benchmark for Co-Reference Resolution on Knowledge Graphs**
🕒 5:08pm - 5:25pm, Oct 21
- **A Large Test Collection for Entity Aspect Linking**
🕒 5:25pm - 5:42pm, Oct 21
- **SDM-RDFizer: An RML Interpreter for the Efficient Creation of RDF Knowledge Graphs**
🕒 5:42pm - 5:59pm, Oct 21
- **BioKG: A Knowledge Graph for Relational Learning On Biological Data**
🕒 5:59pm - 6:16pm, Oct 21
- **Profiling Entity Matching Benchmark Tasks**
🕒 6:16pm - 6:33pm, Oct 21
- **Falcon 2.0: An Entity and Relation Linking Tool over Wikidata**
🕒 6:33pm - 6:50pm, Oct 21
- **Enslaved Dataset: A Real-world Complex Ontology Alignment Benchmark using Wikibase**
🕒 6:50pm - 7:07pm, Oct 21

5:42pm

Question answering and dialogue systems II

🕒 5:42pm - 7:00pm, Oct 21

📍 Dublin

Research Track Long Papers

Session Chairs: Manolis Koubarakis

5 Subsessions

- **Ranking Enhanced Dialogue Generation**
🕒 5:42pm - 5:59pm, Oct 21
- **Schema2QA: Answering Complex Queries on the Structured Web with a Neural Model**
🕒 5:59pm - 6:16pm, Oct 21
- **Quality-Aware Ranking of Arguments**
🕒 6:16pm - 6:33pm, Oct 21
- **Dual Head-wise Coattention Network for Machine Comprehension with Multiple-Choice Questions**
🕒 6:33pm - 6:50pm, Oct 21

- **Short Break**
🕒 6:50pm - 7:00pm, Oct 21

Urban computing II

🕒 5:42pm - 7:00pm, Oct 21

📍 Cork

Research Track Long Papers

Session Chairs: Umair ul Hassan

5 Subsessions

- **Time-Efficient Geo-Obfuscation to Protect Worker Location Privacy over Road Networks in Spatial Crowdsourcing**
🕒 5:42pm - 5:59pm, Oct 21
- **Deep Spatio-Temporal Multiple Domain Fusion Network for Urban Anomalies Detection**
🕒 5:59pm - 6:16pm, Oct 21
- **Personalized Imputation on Wearable-Sensory Time Series via Knowledge Transfer**
🕒 6:16pm - 6:33pm, Oct 21
- **Multi-task Adversarial Spatial-Temporal Networks for Crowd Flow Prediction**
🕒 6:33pm - 6:50pm, Oct 21
- **Short Break**
🕒 6:50pm - 7:00pm, Oct 21

5:44pm

Graph Analytics & Neural Networks

🕒 5:44pm - 7:54pm, Oct 21

📍 Waterford

Research Track Short Papers

Session Chairs: Jian Tang

10 Subsessions

- **Training Sensitivity in Graph Isomorphism Network**
🕒 5:44pm - 5:57pm, Oct 21
- **Embedding Node Structural Role Identity into Hyperbolic Space**
🕒 5:57pm - 6:10pm, Oct 21
- **A View-Adversarial Framework for Multi-View Network Embedding**
🕒 6:10pm - 6:23pm, Oct 21
- **Homogenization with Explicit Semantics Preservation for Heterogeneous Information Network**
🕒 6:23pm - 6:36pm, Oct 21
- **CONE-Align: Consistent Embedding-based Network Alignment**
🕒 6:36pm - 6:49pm, Oct 21
- **GGDs: Graph Generating Dependencies**
🕒 6:49pm - 7:02pm, Oct 21
- **Subsampled Randomized Hadamard Transform for Regression of Dynamic Graphs**
🕒 7:02pm - 7:15pm, Oct 21

- **Do You Really Like Her Post?: Network-Based Analysis for Understanding Like Activities in SNS**
🕒 7:15pm - 7:28pm, Oct 21
- **Learning to Form Skill-based Teams of Experts**
🕒 7:28pm - 7:41pm, Oct 21
- **LogBug: Generating Adversarial System Logs in Real Time**
🕒 7:41pm - 7:54pm, Oct 21

5:59pm

Search and retrieval I

🕒 5:59pm - 7:00pm, Oct 21

📍 Limerick

Research Track Long Papers

Session Chairs: Jaap Kamps

4 Subsessions

- **Diversifying Search Results using Self-Attention Network**
🕒 5:59pm - 6:16pm, Oct 21
- **Evaluating Stochastic Rankings with Expected Exposure**
🕒 6:16pm - 6:33pm, Oct 21
- **Robust Retrieval based Document Selection for Relevance Feedback with Automatically Generated Query Variants**
🕒 6:33pm - 6:50pm, Oct 21
- **Learning to personalize for web search sessions**
🕒 6:50pm - 7:00pm, Oct 21

COVID and biomedical informatics

🕒 5:59pm - 7:00pm, Oct 21

📍 Galway

Research Track Long Papers

Session Chairs: Paolo Missier

4 Subsessions

- **LSAN: Modeling Long-term Dependencies and Short-term Correlations with Hierarchical Attention for Risk Prediction**
🕒 5:59pm - 6:16pm, Oct 21
- **A methodology based on Deep Q-Learning/Genetic Algorithms for optimizing COVID-19 pandemic government actions**
🕒 6:16pm - 6:33pm, Oct 21
- **The COVID-19 Infodemic: Can the Crowd Judge Recent Misinformation Objectively?**
🕒 6:33pm - 6:50pm, Oct 21
- **GraSeq: Graph and Sequence Fusion Learning for Molecular Property Prediction**
🕒 6:50pm - 7:00pm, Oct 21

7:07pm

Learning

🕒 7:07pm - 7:58pm, Oct 21

📍 Kilkenny

Resource Track

Session Chairs: Asif Ekbal

3 Subsessions

- **MLM: A Benchmark Dataset for Multitask Learning with Multiple Languages and Modalities**
🕒 7:07pm - 7:24pm, Oct 21
- **PrivacyFL: A simulator for privacy-preserving and secure federated learning**
🕒 7:24pm - 7:41pm, Oct 21
- **Fine-Grained Relevance Annotations for Multi-Task Document Ranking and Question Answering**
🕒 7:41pm - 7:58pm, Oct 21

Thu, Oct 22, 2020

6:00am

Keynote Talk: Xin Luna Dong

🕒 6:00am - 7:00am, Oct 22

📍 Dublin

Keynote talks

Ceres: Harvesting Knowledge from the Semi-structured Web

Knowledge graphs have been used to support a wide range of applications and enhance search and QA for Google, Amazon Alexa, etc. However, we often miss long-tail knowledge, including unpopular entities, unpopular relations, and unpopular verticals. In this talk we describe our efforts in harvesting knowledge from semi-structured websites, which are often populated according to some templates using vast volume of data stored in underlying databases. We describe our AutoCeres ClosedIE system, which improves the accuracy of fully automatic knowledge extraction from 60%+ of state-of-the-art to 90%+ on semi-structured data. We also describe OpenCeres, the first ever OpenIE system on semi-structured data, that is able to identify new relations not readily included in existing ontologies. In addition, we describe our other efforts in ontology alignment, entity linkage, graph mining, and QA, that allow us to best leverage the knowledge we extract for search and QA.

7:00am

Social and information networks

🕒 7:00am - 8:42am, Oct 22

📍 Dublin

Research Track Long Papers

Session Chairs: Akansha Bhardwaj

6 Subsessions

- **A GAN-based Framework for Modeling Hashtag Popularity Dynamics using Assistive Information**
🕒 7:00am - 7:17am, Oct 22
- **WMEgo: Willingness Maximization for Ego Network Data Extraction in Online Social Networks**
🕒 7:17am - 7:34am, Oct 22
- **LRHNE: A Latent-Relation Enhanced Embedding Method for Heterogeneous**

Information Networks

🕒 7:34am - 7:51am, Oct 22

- **An Adaptive Embedding Framework for Heterogeneous Information Networks**
🕒 7:51am - 8:08am, Oct 22
- **Genetic Meta-Structure Search for Recommendation on Heterogeneous Information Network**
🕒 8:08am - 8:25am, Oct 22
- **Short Break**
🕒 8:25am - 8:42am, Oct 22

Graph embeddings I

🕒 7:00am - 8:42am, Oct 22

📍 Cork

Research Track Long Papers

Session Chairs: Debasis Ganguly

6 Subsessions

- **Fast Attributed Multiplex Heterogeneous Network Embedding**
🕒 7:00am - 7:17am, Oct 22
- **Attributed Network Embedding based on Mutual Information Estimation**
🕒 7:17am - 7:34am, Oct 22
- **Bringing Order to Network Embedding: A Relative Ranking based Approach**
🕒 7:34am - 7:51am, Oct 22
- **CSNE: Conditional Signed Network Embedding**
🕒 7:51am - 8:08am, Oct 22
- **Towards Locality-Aware Meta-Learning of Tail Node Embeddings on Networks**
🕒 8:08am - 8:25am, Oct 22
- **Short Break**
🕒 8:25am - 8:42am, Oct 22

Search & Ranking 2

🕒 7:00am - 8:31am, Oct 22

📍 Waterford

Research Track Short Papers

Session Chairs: Zhaochun Ren

7 Subsessions

- **TABLE: A Task-Adaptive BERT-based Listwise Ranking Model for Document Retrieval**
🕒 7:00am - 7:13am, Oct 22
- **Gated Heterogeneous Graph Representation Learning for Shop Search in E-commerce**
🕒 7:13am - 7:26am, Oct 22
- **Diversifying Multi-aspect Search Results Using Simpson's Diversity Index**
🕒 7:26am - 7:39am, Oct 22
- **T-REX: A Topic-Aware Relation Extraction Model**
🕒 7:39am - 7:52am, Oct 22

- **What Rankers Can be Statistically Distinguished in Multileaved Comparisons?**

🕒 7:52am - 8:05am, Oct 22

- **Bridging the Gap between Click and Relevance for Learning-to-Rank with Minimal Supervision**

🕒 8:05am - 8:18am, Oct 22

- **Short Break**

🕒 8:18am - 8:31am, Oct 22

Neural Networks & Applications 1

🕒 7:00am - 10:00am, Oct 22

📍 Galway

Research Track Short Papers

Session Chairs: Xin Zhao

8 Subsessions

- **Non-local Self-attentive Autoencoder for Genetic Functionality Prediction**

🕒 7:00am - 7:13am, Oct 22

- **Behavior-driven Student Performance Prediction with Tri-Branch Convolutional Neural Network**

🕒 7:13am - 7:26am, Oct 22

- **Deep Interaction Machine: A Simple but Effective Model for High-order Feature Interactions**

🕒 7:26am - 7:39am, Oct 22

- **Deep Adaptive Feature Aggregation in Multi-task Convolutional Neural Networks**

🕒 7:39am - 7:52am, Oct 22

- **Label-Aware Graph Convolutional Networks**

🕒 7:52am - 8:05am, Oct 22

- **Graph Unfolding Networks**

🕒 8:05am - 8:18am, Oct 22

- **An Index Advisor Using Deep Reinforcement Learning**

🕒 8:18am - 8:31am, Oct 22

- **Integrating Diagnosis Rules into Deep Neural Networks for Bladder Cancer Staging**

🕒 8:31am - 8:44am, Oct 22

Search

🕒 7:00am - 9:16am, Oct 22

📍 Kilkenny

Resource Track

Session Chairs: Joel Mackenzie

8 Subsessions

- **MindReader: Recommendation over Knowledge Graph Entities with Explicit User Ratings**

🕒 7:00am - 7:17am, Oct 22

- **ContentWise Impressions: An industrial dataset with impressions included**

🕒 7:17am - 7:34am, Oct 22

- **LensKit for Python: Next-Generation Software for Recommender Systems Experiments**
🕒 7:34am - 7:51am, Oct 22
- **ReQue: A Configurable Workflow and Dataset Collection for Query Refinement**
🕒 7:51am - 8:08am, Oct 22
- **A Large-Scale Search Clarification Data Collection**
🕒 8:08am - 8:25am, Oct 22
- **Feature Extraction for Large-Scale Text Collections**
🕒 8:25am - 8:42am, Oct 22
- **ORCAS: 20 Million Clicked Query-Document Pairs for Analyzing Search**
🕒 8:42am - 8:59am, Oct 22
- **Flexible IR Pipelines with Capreolus**
🕒 8:59am - 9:16am, Oct 22

Advertising I

🕒 7:00am - 8:25am, Oct 22

📍 Sligo

Applied Research Track

Session Chairs: Anna Lisa Gentile

5 Subsessions

- **Two-Stage Audience Expansion for Financial Targeting in Marketing**
🕒 7:00am - 7:17am, Oct 22
- **Bid Shading in The Brave New World of First-Price Auctions**
🕒 7:17am - 7:34am, Oct 22
- **AutoADR: Automatic Model Design for Ad Relevance**
🕒 7:34am - 7:51am, Oct 22
- **BotSpot: A Hybrid Learning Framework to Uncover Bot Install Fraud in Mobile Advertising**
🕒 7:51am - 8:08am, Oct 22
- **Short Break**
🕒 8:08am - 8:25am, Oct 22

AI Applications II

🕒 7:00am - 10:00am, Oct 22

📍 Athlone

Applied Research Track

Session Chairs: Giuseppe Attardi

8 Subsessions

- **ART (Attractive Recommendation Tailor): How the Diversity of Product Recommendations Affects Customer Purchase Preference in Fashion Industry?**
🕒 7:51am - 8:08am, Oct 22
- **Personalized Bundle Recommendation in Online Games**
🕒 8:08am - 8:25am, Oct 22
- **Graph Neural Network for Tag Ranking in Tag-enhanced Video Recommendation**

🕒 8:25am - 8:42am, Oct 22

● **Efficiently Training Intelligible Models for Global Explanations**

🕒 8:42am - 8:59am, Oct 22

● **Continuous Improvement of Medical Diagnostic Systems with Large Scale Patient Vignette Simulation**

🕒 8:59am - 9:16am, Oct 22

● **Personalized Flight Itinerary Ranking at Fliggy**

🕒 9:16am - 9:33am, Oct 22

● **Learning Effective Representations for Person-Job Fit by Feature Fusion**

🕒 9:33am - 9:50am, Oct 22

● **Short Break**

🕒 9:50am - 10:00am, Oct 22

Adversarial Challenge on Object Detection

🕒 7:00am - 11:00am, Oct 22

📍 Wexford

Analyticup

Session Chairs: Xiaofei Zhu

13 Subsessions

● **Transition Break**

🕒 7:00am - 7:10am, Oct 22

● **Keynote 1**

🕒 7:10am - 7:50am, Oct 22

● **Presentation from winner number 1**

🕒 7:50am - 8:05am, Oct 22

● **Presentation from winner number 2**

🕒 8:05am - 8:20am, Oct 22

● **Presentation from winner number 3**

🕒 8:20am - 8:35am, Oct 22

● **Presentation from winner number 4**

🕒 8:35am - 8:50am, Oct 22

● **Presentation from winner number 5**

🕒 8:50am - 9:05am, Oct 22

● **Keynote 2 (Alibaba)**

🕒 9:05am - 9:45am, Oct 22

● **Presentation from winner number 6**

🕒 9:45am - 10:00am, Oct 22

● **Presentation from winner number 7**

🕒 10:00am - 10:15am, Oct 22

● **Presentation from winner number 8**

🕒 10:15am - 10:30am, Oct 22

● **Presentation from winner number 9**

🕒 10:30am - 10:45am, Oct 22

● **Presentation from winner number 10**

🕒 10:45am - 11:00am, Oct 22

8:25am

E-Commerce

🕒 8:25am - 9:33am, Oct 22

📍 Sligo

Applied Research Track

Session Chairs: Mayank Kejriwal

4 Subsessions

- **Improving Multi-Scenario Learning to Rank in E-commerce by Exploiting Task Relationships in the Label Space**
🕒 8:25am - 8:42am, Oct 22
- **Category-aware Graph Neural Networks for Improving E-Commerce Review Helpfulness Prediction**
🕒 8:42am - 8:59am, Oct 22
- **Deep Multifaceted Transformers for Multi-objective Ranking in Large-Scale E-commerce Recommender Systems**
🕒 8:59am - 9:16am, Oct 22
- **Multi-Channel Sellers Traffic Allocation in Large-scale E-commerce Promotion**
🕒 9:16am - 9:33am, Oct 22

8:31am

Search & Ranking 3

🕒 8:31am - 10:02am, Oct 22

📍 Waterford

Research Track Short Papers

Session Chairs: Liang Pang

7 Subsessions

- **Hybrid Dynamic Pruning for Efficient and Effective Query Processing**
🕒 8:31am - 8:44am, Oct 22
- **Learning to Generate Reformulation Actions for Scalable Conversational Query Understanding**
🕒 8:44am - 8:57am, Oct 22
- **Speaker-Aware BERT for Multi-Turn Response Selection in Retrieval-Based Chatbots**
🕒 8:57am - 9:10am, Oct 22
- **Product Insights: Analyzing Product Intents in Web Search**
🕒 9:10am - 9:23am, Oct 22
- **Dimension Relation Modeling for Click-Through Rate Prediction**
🕒 9:23am - 9:36am, Oct 22
- **An Event-Oriented Neural Ranking Model for News Retrieval**
🕒 9:36am - 9:49am, Oct 22
- **Deep Multi-Interest Network for Click-through Rate Prediction**
🕒 9:49am - 10:02am, Oct 22

8:42am

Recommendation III

🕒 8:42am - 10:00am, Oct 22

📍 Dublin

Research Track Long Papers

Session Chairs: Mohammad Aliannejadi

5 Subsessions

- **Improving End-to-End Sequential Recommendations with Intent-aware Diversification**
🕒 8:42am - 8:59am, Oct 22
- **Learning Graph-Based Geographical Latent Representation for Point-of-Interest Recommendation**
🕒 8:59am - 9:16am, Oct 22
- **Set-Sequence-Graph: A Multi-View Approach Towards Exploiting Reviews for Recommendation**
🕒 9:16am - 9:33am, Oct 22
- **DE-RRD: A Knowledge Distillation Framework for Recommender System**
🕒 9:33am - 9:50am, Oct 22
- **S³-Rec: Self-Supervised Learning for Sequential Recommendation with Mutual Information Maximization**
🕒 9:50am - 10:00am, Oct 22

Search and retrieval II

🕒 8:42am - 10:00am, Oct 22

📍 Cork

Research Track Long Papers

Session Chairs: Guido Zuccon

5 Subsessions

- **Offline evaluation by maximum similarity to an ideal ranking**
🕒 8:42am - 8:59am, Oct 22
- **Corpus Bootstrapping for Assessment of the Accuracy of Effectiveness Measures**
🕒 8:59am - 9:16am, Oct 22
- **When Structure Meets Keywords: Cohesive Attributed Community Search**
🕒 9:16am - 9:33am, Oct 22
- **When Inverse Propensity Scoring does not Work: Affine Corrections for Unbiased Learning to Rank**
🕒 9:33am - 9:50am, Oct 22
- **Learning Better Representations for Neural Information Retrieval with Graph Information**
🕒 9:50am - 10:00am, Oct 22

10:00am

Town Hall + Panel

🕒 10:00am - 11:00am, Oct 22

📍 Dublin

Plenary sessions

Town Hall meeting on the organisation of CIKM and panel on the sustainability aspects of the conference and research by CIKM participants

3:00pm

Keynote Talk: Carlo Curino

🕒 3:00pm - 4:00pm, Oct 22

📍 Dublin

Keynote talks

Cloudy With High Chance Of DBMS: A 10-year Prediction For Enterprise-Grade ML

Machine learning (ML) has proven itself in high-value web applications such as search ranking and is emerging as a powerful tool in a much broader range of enterprise scenarios including voice recognition and conversational understanding for customer support, auto-tuning for videoconferencing, intelligent feedback loops in large-scale sysops, manufacturing and autonomous vehicle management, complex financial predictions, just to name a few. Meanwhile, as the value of data is increasingly recognized and monetized, concerns about securing valuable data and risks to individual privacy have been growing. Furthermore broader adoption leads to less experience development teams, further increasing risks of misuse of these technologies. Rigorous data management has emerged as a key requirement in enterprise settings. How will these trends (ML growing popularity, and stricter data governance) intersect? What are the unmet requirements for applying ML in enterprise settings? What are the technical challenges for the DB community to solve? In this talk, we present a vision of how ML and database systems are likely to come together, and highlight fascinating early results towards in building Enterprise Grade Machine Learning (EGML).

COVID-19 Retweet Prediction Challenge

🕒 3:00pm - 6:00pm, Oct 22

📍 Wexford

Analyticup

Session Chairs: Dimitar Dimitrov

9 Subsessions

● **Opening**

🕒 3:00pm - 3:15pm, Oct 22

● **Keynote**

🕒 3:15pm - 3:45pm, Oct 22

● **COVID-19 Retweet Prediction with Personalized Attention**

🕒 3:45pm - 4:00pm, Oct 22

● **COVID-19 Retweet Prediction Challenge Report**

🕒 4:00pm - 4:15pm, Oct 22

● **Break**

🕒 4:15pm - 4:30pm, Oct 22

● **Feature Extraction for Deep Neural Network: A Case Study on COVID-19 Retweet Prediction Challenge**

🕒 4:30pm - 4:45pm, Oct 22

● **Learn Long-tailed Tweet Data by Using GBDT Method**

🕒 4:45pm - 5:00pm, Oct 22

● **Break**

🕒 5:00pm - 5:30pm, Oct 22

- **Awards and closing**
🕒 5:30pm - 6:00pm, Oct 22

4:00pm

Database and system

🕒 4:00pm - 5:25pm, Oct 22

📍 Dublin

Research Track Long Papers

Session Chairs: Piyush Yadav

5 Subsessions

- **Efficient Detection of Data Dependency Violations**
🕒 4:00pm - 4:17pm, Oct 22
- **Minimal Edit-Based Diffs for Large Trees**
🕒 4:17pm - 4:34pm, Oct 22
- **Learning from Textual Data in Database Systems**
🕒 4:34pm - 4:51pm, Oct 22
- **Optimization of Answer Set Programs for Consistent Query Answering by Means of First-Order Rewriting**
🕒 4:51pm - 5:08pm, Oct 22
- **Short Break**
🕒 5:08pm - 5:25pm, Oct 22

Data mining I

🕒 4:00pm - 5:25pm, Oct 22

📍 Cork

Research Track Long Papers

Session Chairs: María S. Pérez

5 Subsessions

- **Learning with Noisy Partial Labels by Simultaneously Leveraging Global and Local Consistencies**
🕒 4:00pm - 4:17pm, Oct 22
- **Selecting Influential Features by a Learnable Content-Aware Linear Threshold Model**
🕒 4:17pm - 4:34pm, Oct 22
- **Feature Fusion Based Subgraph Classification for Link Prediction**
🕒 4:34pm - 4:51pm, Oct 22
- **Robust Temporal PARAFAC2 for Irregular Tensor Factorization and Completion for Temporal Health Data Analysis**
🕒 4:51pm - 5:08pm, Oct 22
- **Short Break**
🕒 5:08pm - 5:25pm, Oct 22

Neural Networks & Applications 2

🕒 4:00pm - 5:44pm, Oct 22

📍 Waterford

Research Track Short Papers

Session Chairs: Liu Yang

8 Subsessions

- **A Reinforced Semi-Supervised Neural Network for Helpful Review Identification**
⌚ 4:00pm - 4:13pm, Oct 22
- **DynamicRec: A Dynamic Convolutional Network for Next Item Recommendation**
⌚ 4:13pm - 4:26pm, Oct 22
- **Building Test Collections using Bandit Techniques: A Reproducibility Study**
⌚ 4:26pm - 4:39pm, Oct 22
- **Can Adversarial Weight Perturbations Inject Neural Backdoors?**
⌚ 4:39pm - 4:52pm, Oct 22
- **GAEAT: Graph Auto-Encoder Attention Networks for Knowledge Graph Completion**
⌚ 4:52pm - 5:05pm, Oct 22
- **Neural Relation Extraction on Wikipedia Tables for Augmenting Knowledge Graphs**
⌚ 5:05pm - 5:18pm, Oct 22
- **Application Performance Anomaly Detection with LSTM on Temporal Irregularities in Logs**
⌚ 5:18pm - 5:31pm, Oct 22
- **Short Break**
⌚ 5:31pm - 5:44pm, Oct 22

AI Applications III

⌚ 4:00pm - 5:59pm, Oct 22

📍 Athlone

Applied Research Track

Session Chairs: Ismini Lourentzou

7 Subsessions

- **MTBRN: Multiplex Target-Behavior Relation Enhanced Network for Click-Through Rate Prediction**
⌚ 4:00pm - 4:17pm, Oct 22
- **Query Understanding for Surfacing Underserved Music Content**
⌚ 4:17pm - 4:34pm, Oct 22
- **Search-based User Interest Modeling with Lifelong Sequential Behavior Data for Click-through Rate Prediction**
⌚ 4:34pm - 4:51pm, Oct 22
- **Magellan: A Personalized Travel Recommendation System Using Transaction Data**
⌚ 4:51pm - 5:08pm, Oct 22
- **Detection of Novel Social Bots by Ensembles of Specialized Classifiers**
⌚ 5:08pm - 5:25pm, Oct 22
- **Helix: DGA Domain Embeddings for Tracking and Exploring Botnets**
⌚ 5:25pm - 5:42pm, Oct 22
- **Short Break**
⌚ 5:42pm - 5:59pm, Oct 22

5:25pm

Text mining

🕒 5:25pm - 7:00pm, Oct 22

📍 Dublin

Research Track Long Papers

Session Chairs: Simon Razniewski

6 Subsessions

- **Keep it Simple, Lazy -- MetaLazy: a New MetaStrategy for Lazy Text Classification**
🕒 5:25pm - 5:42pm, Oct 22
- **Extracting N-ary Facts from Wikipedia Table Clusters**
🕒 5:42pm - 5:59pm, Oct 22
- **Continual Domain Adaptation for Machine Reading Comprehension**
🕒 5:59pm - 6:16pm, Oct 22
- **Probabilistic Dynamic Non-negative Group Factor Model for Multi-source Text Mining**
🕒 6:16pm - 6:33pm, Oct 22
- **Aspect-Invariant Sentiment Feature Learning: Adversarial Multi-task Learning for Aspect-Based Sentiment Analysis**
🕒 6:33pm - 6:50pm, Oct 22
- **Short Break**
🕒 6:50pm - 7:00pm, Oct 22

Graph neural networks I

🕒 5:25pm - 7:00pm, Oct 22

📍 Cork

Research Track Long Papers

Session Chairs: Michael Cochez

6 Subsessions

- **Graph Prototypical Networks for Few-shot Learning on Attributed Networks**
🕒 5:25pm - 5:42pm, Oct 22
- **Cola-GNN: Cross-location Attention based Graph Neural Networks for Long-term ILLI Prediction**
🕒 5:42pm - 5:59pm, Oct 22
- **Semi-Supervised Graph-to-Graph Translation**
🕒 5:59pm - 6:16pm, Oct 22
- **Error-bounded Graph Anomaly Loss for GNNs**
🕒 6:16pm - 6:33pm, Oct 22
- **NHP: Neural Hypergraph Link Prediction**
🕒 6:33pm - 6:50pm, Oct 22
- **Investigating and Mitigating Degree-Related Biases in Graph Convolutional Networks**
🕒 6:50pm - 7:00pm, Oct 22

5:44pm

Data Analytics 1

🕒 5:44pm - 7:00pm, Oct 22

📍 Waterford

Research Track Short Papers

Session Chairs: George Fletcher

6 Subsessions

- **Robust Normalized Squares Maximization for Unsupervised Domain Adaptation**
🕒 5:44pm - 5:57pm, Oct 22
- **DECWA : Density-Based Clustering using Wasserstein Distance**
🕒 5:57pm - 6:10pm, Oct 22
- **A Framework for Analyzing the Impact of Missing Data in Predictive Models**
🕒 6:10pm - 6:23pm, Oct 22
- **On-demand Influencer Discovery on Social Media**
🕒 6:23pm - 6:36pm, Oct 22
- **A Synopses Data Engine for Interactive Extreme-Scale Analytics**
🕒 6:36pm - 6:49pm, Oct 22
- **Learning Discriminative Virtual Sequences for Time Series Classification**
🕒 6:49pm - 7:00pm, Oct 22

5:59pm

Natural Language Processing

🕒 5:59pm - 7:00pm, Oct 22

📍 Athlone

Applied Research Track

Session Chairs: Giuseppe Rizzo

4 Subsessions

- **Personalizing Natural Language Understanding using Multi-armed Bandits and Implicit Feedback**
🕒 5:59pm - 6:16pm, Oct 22
- **AGATHA: Automatic Graph mining and Transformer based Hypothesis generation Approach**
🕒 6:16pm - 6:33pm, Oct 22
- **Learning Formatting Style Transfer and Structure Extraction for Spreadsheet Tables with a Hybrid Neural Network Architecture**
🕒 6:33pm - 6:50pm, Oct 22
- **Crime Linkage Based on Textual Hebrew Police Reports Utilizing Behavioral Patterns**
🕒 6:50pm - 7:00pm, Oct 22

7:00pm

Keynote Talk: Xin Luna Dong (from recording)

🕒 7:00pm - 8:00pm, Oct 22

📍 Dublin

Keynote talks

Ceres: Harvesting Knowledge from the Semi-structured Web

Knowledge graphs have been used to support a wide range of applications and enhance search and QA for Google, Amazon Alexa, etc. However, we often miss long-tail knowledge, including unpopular entities, unpopular relations, and unpopular verticals. In this talk we describe our efforts in harvesting knowledge from semi-structured websites, which are often populated according to some templates using vast volume of data stored in underlying databases. We describe our AutoCeres ClosedIE system, which improves the accuracy of fully automatic knowledge extraction from 60%+ of state-of-the-art to 90%+ on semi-structured data. We also describe OpenCeres, the first ever OpenIE system on semi-structured data, that is able to identify new relations not readily included in existing ontologies. In addition, we describe our other efforts in ontology alignment, entity linkage, graph mining, and QA, that allow us to best leverage the knowledge we extract for search and QA.

Fri, Oct 23, 2020

6:00am

Keynote Talk: Carlo Curino (from recording)

🕒 6:00am - 7:00am, Oct 23

📍 Dublin

Keynote talks

Cloudy With High Chance Of DBMS: A 10-year Prediction For Enterprise-Grade ML

Machine learning (ML) has proven itself in high-value web applications such as search ranking and is emerging as a powerful tool in a much broader range of enterprise scenarios including voice recognition and conversational understanding for customer support, auto-tuning for videoconferencing, intelligent feedback loops in large-scale sysops, manufacturing and autonomous vehicle management, complex financial predictions, just to name a few. Meanwhile, as the value of data is increasingly recognized and monetized, concerns about securing valuable data and risks to individual privacy have been growing. Furthermore broader adoption leads to less experience development teams, further increasing risks of misuse of these technologies. Rigorous data management has emerged as a key requirement in enterprise settings. How will these trends (ML growing popularity, and stricter data governance) intersect? What are the unmet requirements for applying ML in enterprise settings? What are the technical challenges for the DB community to solve? In this talk, we present a vision of how ML and database systems are likely to come together, and highlight fascinating early results towards in building Enterprise Grade Machine Learning (EGML).

7:00am

Graph embeddings II

🕒 7:00am - 7:51am, Oct 23

📍 Dublin

Research Track Long Papers

Session Chairs: Paolo Ceravolo

3 Subsessions

- **G-CREWE: Graph CompREssion With Embedding for Network Alignment**

🕒 7:00am - 7:17am, Oct 23

- **Dynamic Representation Learning for Large-Scale Attributed Networks**

🕒 7:17am - 7:34am, Oct 23

- **Continuous-Time Dynamic Graph Learning via Neural Interaction Processes**

🕒 7:34am - 7:51am, Oct 23

Machine learning topics I

🕒 7:00am - 8:42am, Oct 23

📍 Cork

Research Track Long Papers

6 Subsessions

- **More Than One: A Cluster-Prototype Matching Framework for Zero-Shot Learning**
🕒 7:00am - 7:17am, Oct 23
- **Logic Enhanced Commonsense Inference with Chain Transformer**
🕒 7:17am - 7:34am, Oct 23
- **Carpe Diem, Seize the Samples Uncertain "at the Moment" for Adaptive Batch Selection**
🕒 7:34am - 7:51am, Oct 23
- **Succinct Adaptive Manifold Transfer**
🕒 7:51am - 8:08am, Oct 23
- **Neural Logical Prediction**
🕒 8:08am - 8:25am, Oct 23
- **LB-CGM: Latent Based Conditional Generative Model with Reliable Distribution Prediction**
🕒 8:25am - 8:42am, Oct 23

Recommendation IV

🕒 7:00am - 9:16am, Oct 23

📍 Limerick

Research Track Long Papers

Session Chairs: Laura Rettig

7 Subsessions

- **Attacking Recommender Systems with Augmented User Profiles**
🕒 7:00am - 7:17am, Oct 23
- **Recommending Inferior Results: A General and Feature-Free Model for Spam Detection**
🕒 7:17am - 7:34am, Oct 23
- **TPR: Text-aware Preference Ranking for Recommender Systems**
🕒 7:34am - 7:51am, Oct 23
- **DisenHAN: Disentangled Heterogeneous Graph Attention Network for Recommendation**
🕒 7:51am - 8:08am, Oct 23
- **Cross Domain Recommendation via Bi-directional Transfer Graph Collaborative Filtering Networks**
🕒 8:08am - 8:25am, Oct 23
- **Partial Relationship Aware Influence Diffusion via Multi-channel Encoding Scheme for Social Recommendation**
🕒 8:25am - 8:42am, Oct 23
- **Short Break**
🕒 8:42am - 9:16am, Oct 23

NLP

🕒 7:00am - 8:42am, Oct 23

📍 Galway

Research Track Long Papers

Session Chairs: Cécile Robin

6 Subsessions

- **Soap: Soaking Capacity Optimization for Multi-Document Summarization**
🕒 7:00am - 7:17am, Oct 23
- **Zero-Shot Retrieval of Images from Textual Descriptions**
🕒 7:17am - 7:34am, Oct 23
- **Learning to Distract: A Hierarchical Multi-Decoder Network for Automatic Generation of Long Distractors for Reading Comprehension**
🕒 7:34am - 7:51am, Oct 23
- **Controllable Multi-Character Psychology-Oriented Story Generation**
🕒 7:51am - 8:08am, Oct 23
- **Image Captioning with Internal and External Knowledge**
🕒 8:08am - 8:25am, Oct 23
- **Short Break**
🕒 8:25am - 8:42am, Oct 23

Graphs and Streams

🕒 7:00am - 8:31am, Oct 23

📍 Waterford

Research Track Short Papers

Session Chairs: Chuan Shi & Bingsheng He

8 Subsessions

- **Generative Adversarial Attributed Network Anomaly Detection**
🕒 7:00am - 7:13am, Oct 23
- **Data Augmentation for Graph Classification**
🕒 7:13am - 7:26am, Oct 23
- **Are Negative Links Really Beneficial to Network Embedding? In-Depth Analysis and Interesting Results**
🕒 7:26am - 7:39am, Oct 23
- **NASE: Learning Knowledge Graph Embedding for Link Prediction via Neural Architecture Search**
🕒 7:39am - 7:52am, Oct 23
- **Community Identification in Signed Networks: A K-Truss Based Model**
🕒 7:52am - 8:05am, Oct 23
- **CR-Graph: Community Reinforcement for Accurate Community Detection**
🕒 8:05am - 8:18am, Oct 23
- **Rethinking Operators Placement of Stream Data Application in the Edge**
🕒 8:05am - 8:18am, Oct 23
- **Short Break**
🕒 8:18am - 8:31am, Oct 23

Recommender Systems

🕒 7:00am - 8:31am, Oct 23

📍 Kilkenny

Research Track Short Papers

Session Chairs: Xiang Wang

7 Subsessions

- **Revisiting Alternative Experimental Settings for Evaluating Top-N Item Recommendation Algorithms**
🕒 7:00am - 7:13am, Oct 23
- **Leveraging Historical Interaction Data for Improving Conversational Recommender System**
🕒 7:13am - 7:26am, Oct 23
- **Dual Autoencoder Network with Swap Reconstruction for Cold-Start Recommendation**
🕒 7:26am - 7:39am, Oct 23
- **DREAM: A Dynamic Relation-Aware Model for social recommendation**
🕒 7:39am - 7:52am, Oct 23
- **Multiplex Graph Neural Networks for Multi-behavior Recommendation**
🕒 7:52am - 8:05am, Oct 23
- **Feedback Loop and Bias Amplification in Recommender Systems**
🕒 8:05am - 8:18am, Oct 23
- **Short Break**
🕒 8:18am - 8:31am, Oct 23

Knowledge Understanding

🕒 7:00am - 8:59am, Oct 23

📍 Athlone

Applied Research Track

Session Chairs: Mayank Kejriwal

7 Subsessions

- **Ensembled CTR Prediction via Knowledge Distillation**
🕒 7:00am - 7:17am, Oct 23
- **AliMeKG: Domain Knowledge Graph Construction and Application in E-commerce**
🕒 7:17am - 7:34am, Oct 23
- **Fusing Global Domain Information and Local Semantic Information to Classify Financial Documents**
🕒 7:34am - 7:51am, Oct 23
- **The Utility of Context When Extracting Entities From Legal Documents**
🕒 7:51am - 8:08am, Oct 23
- **TwinBERT: Distilling Knowledge to Twin-Structured Compressed BERT Models for Large-Scale Retrieval**
🕒 8:08am - 8:25am, Oct 23
- **Query-aware Tip Generation for Vertical Search**
🕒 8:25am - 8:42am, Oct 23
- **U-rank: Utility-oriented Learning to Rank with Implicit Feedback**

🕒 8:42am - 8:59am, Oct 23

Demos 1

🕒 7:00am - 9:16am, Oct 23

📍 Sligo

Posters & Demos

Session Chairs: Xiaodong Li & Hongzhi Wang (7:00-7:56 am)

Yilian Xin & Hongzhi Wang (7:56-9:16 am)

17 Subsessions

- **InterNet: Multistep Traffic Forecasting by Interacting Spatial and Temporal Features**
🕒 7:00am - 7:08am, Oct 23
- **UI-FAME: A High-Performance Forgetting System for Creating Views of Ontologies**
🕒 7:08am - 7:16am, Oct 23
- **Gtensor: Fast and Accurate Tensor Analysis System using GPUs**
🕒 7:16am - 7:24am, Oct 23
- **Visualet: Visualizing Shapelets for Time Series Classification**
🕒 7:24am - 7:32am, Oct 23
- **A Toolkit for Managing Multiple Crowdsourced Top-K Queries**
🕒 7:32am - 7:40am, Oct 23
- **Nebula: a Scalable Privacy-Preserving Machine Learning System in Ant Financial**
🕒 7:40am - 7:48am, Oct 23
- **IDEAL: IDentifying the User's IdeAL Tuple via Sorting in the Database**
🕒 7:48am - 7:56am, Oct 23
- **April: An Automatic Graph Data Management System Based on Reinforcement Learning**
🕒 7:56am - 8:04am, Oct 23
- **EasyGML: A Fully-functional and Easy-to-use Platform for Industrial Graph Machine Learning**
🕒 8:04am - 8:12am, Oct 23
- **AURORA: An Information Extraction System of Domain-specific Business Documents with Limited Data**
🕒 8:12am - 8:20am, Oct 23
- **INforE: Interactive Cross-platform Analytics for Everyone**
🕒 8:20am - 8:28am, Oct 23
- **SemFE: Facilitating ML Pipeline Development with Semantics**
🕒 8:28am - 8:36am, Oct 23
- **M-Cypher: A GQL Framework Supporting Motifs**
🕒 8:36am - 8:44am, Oct 23
- **UWKGM: A Modular Platform for Knowledge Graph Management**
🕒 8:44am - 8:52am, Oct 23
- **User and Context Integrated Experience Mining in Online Health Communities**
🕒 8:52am - 9:00am, Oct 23
- **Inside Quasimodo: Exploring Construction and Usage of Commonsense Knowledge**
🕒 9:00am - 9:08am, Oct 23

- **Short Break**

🕒 9:08am - 9:16am, Oct 23

7:51am

Graph neural networks II

🕒 7:51am - 9:33am, Oct 23

📍 Dublin

Research Track Long Papers

Session Chairs: Paolo Ceravolo

6 Subsessions

- **Fast Graph Convolution Network Based Multi-label Image Recognition via Cross-modal Fusion**

🕒 7:51am - 8:08am, Oct 23

- **Graph Few-shot Learning with Attribute Matching**

🕒 8:08am - 8:25am, Oct 23

- **TGCN: Tag Graph Convolutional Network for Tag-Aware Recommendation**

🕒 8:25am - 8:42am, Oct 23

- **Adaptive-Step Graph Meta-Learner for Few-Shot Graph Classification**

🕒 8:42am - 8:59am, Oct 23

- **Streaming Graph Neural Networks via Continual Learning**

🕒 8:59am - 9:16am, Oct 23

- **A Feature-Importance-Aware and Robust Aggregator for GCN**

🕒 9:16am - 9:33am, Oct 23

8:31am

Entity Linking, Summarization

🕒 8:31am - 10:54am, Oct 23

📍 Waterford

Research Track Short Papers

Session Chairs: Aixin Sun

9 Subsessions

- **Securing Bloom Filters for Privacy-preserving Record Linkage**

🕒 8:31am - 8:44am, Oct 23

- **Evaluating the Impact of Knowledge Graph Context on Entity Disambiguation Models**

🕒 8:44am - 8:57am, Oct 23

- **Why is That a Background Article? A Qualitative Analysis of Relevance for News Background Linking**

🕒 8:57am - 9:10am, Oct 23

- **Schema-Agnostic Entity Matching using Pre-trained Language Models**

🕒 9:10am - 9:23am, Oct 23

- **DistilSum: Distilling the Knowledge for Extractive Summarization**

🕒 9:23am - 9:36am, Oct 23

- **Short Break**

🕒 9:36am - 9:49am, Oct 23

- **Enhance Prototypical Networks with Text Descriptions for Few-shot Relation Classification**
🕒 9:49am - 10:02am, Oct 23
- **Hyper-Substructure Enhanced Link Predictor**
🕒 10:02am - 10:15am, Oct 23
- **Relation Extraction with Self-determined Graph Convolutional Networks**
🕒 10:15am - 10:28am, Oct 23

Data Analytics 2

🕒 8:31am - 10:15am, Oct 23

📍 Kilkenny

Research Track Short Papers

Session Chairs: Cheng Yang

8 Subsessions

- **Resolving Class Imbalance Problem in Financial Credit Risk Assessment via Adversarial Data Augmentation**
🕒 8:31am - 8:44am, Oct 23
- **Tolerant Markov Boundary Discovery for Feature Selection**
🕒 8:44am - 8:57am, Oct 23
- **MetaTPOT: Enhancing A Tree-based Pipeline Optimization Tool Using Meta-Learning**
🕒 8:57am - 9:10am, Oct 23
- **Leveraging User Email Actions to Improve Ad-Close Prediction**
🕒 9:10am - 9:23am, Oct 23
- **NumClaim: Investor's Fine-grained Claim Detection**
🕒 9:23am - 9:36am, Oct 23
- **Multimodal Clustering via Deep Commonness and Uniqueness Mining**
🕒 9:36am - 9:49am, Oct 23
- **Representative Negative Instance Generation for Online Ad Targeting**
🕒 9:49am - 10:02am, Oct 23
- **Few-shot Insider Threat Detection**
🕒 10:02am - 10:15am, Oct 23

8:42am

Online Content

🕒 8:42am - 10:58am, Oct 23

📍 Cork

Research Track Long Papers

Session Chairs: Tarek Zaarour

8 Subsessions

- **Describing and Predicting Online Items with Resharing Cascades via Dual Mixture Self-exciting Processes**
🕒 8:42am - 8:59am, Oct 23
- **Auxiliary-task Based Deep Reinforcement Learning for Participant Selection Problem in Mobile Crowdsourcing**

🕒 8:59am - 9:16am, Oct 23

● **Feature Selection on Data Stream via Multi-Cluster Structure Preservation**

🕒 9:16am - 9:33am, Oct 23

● **Jointly Modeling Individual Student Behaviors and Social Influence for Prediction Tasks**

🕒 9:33am - 9:50am, Oct 23

● **UPON: User Profile Transferring across Networks**

🕒 9:50am - 10:07am, Oct 23

● **Modelling User Behavior Dynamics with Embeddings**

🕒 10:07am - 10:24am, Oct 23

● **METEOR: Learning Memory and Time Efficient Representations from Multi-modal Data Streams**

🕒 10:24am - 10:41am, Oct 23

● **OHEA: Secure Data Aggregation in Wireless Sensor Networks against Untrusted Sensors**

🕒 10:41am - 10:58am, Oct 23

Data mining III

🕒 8:42am - 10:07am, Oct 23

📍 Galway

Research Track Long Papers

Session Chairs: Ines Arous

5 Subsessions

● **Ensemble Block Co-clustering: a Unified Framework for Text Data**

🕒 8:42am - 8:59am, Oct 23

● **RKT : Relation-Aware Self-Attention for Knowledge Tracing**

🕒 8:59am - 9:16am, Oct 23

● **SenticNet 6: Ensemble Application of Symbolic and Subsymbolic AI for Sentiment Analysis**

🕒 9:16am - 9:33am, Oct 23

● **Mining Infrequent High-Quality Phrases from Domain-Specific Corpora**

🕒 9:33am - 9:50am, Oct 23

● **Learning to Match Jobs with Resumes from Sparse Interaction Data using Multi-View Co-Teaching Network**

🕒 9:50am - 10:07am, Oct 23

8:59am

Urban Computing

🕒 8:59am - 10:58am, Oct 23

📍 Athlone

Applied Research Track

Session Chairs: Gabriele Tolomei

7 Subsessions

● **Predicting Quality of Automated Welding with Machine Learning and Semantics: A**

Bosch Case Study

🕒 8:59am - 9:16am, Oct 23

- **ITAD: Integrative Tensor-based Anomaly Detection System for Reducing False Postives of Satellite Systems**
🕒 9:16am - 9:33am, Oct 23
- **Who is Delivering My Food? Detecting Food Delivery Abusers using Variational Reward Inference Networks**
🕒 9:33am - 9:50am, Oct 23
- **You Are How You Use: Catching Gas Theft Suspects among Diverse Restaurant Users**
🕒 9:50am - 10:07am, Oct 23
- **Generating Full Spatiotemporal Vehicular Paths: A Data Fusion Approach**
🕒 10:07am - 10:24am, Oct 23
- **Elevated Road Network: a Metric Learning Method for Recognizing Whether a Vehicle is on an Elevated Road**
🕒 10:24am - 10:41am, Oct 23
- **Peer-inspired Student Performance Prediction in Interactive Online Question Pools with Graph Neural Network**
🕒 10:41am - 10:58am, Oct 23

9:16am

Spatio-temporal, search and retrieval

🕒 9:16am - 10:58am, Oct 23

📍 Limerick

Research Track Long Papers

Session Chairs: Mourad Khayati

6 Subsessions

- **Efficient Sampling Algorithms for Approximate Temporal Motif Counting**
🕒 9:16am - 9:33am, Oct 23
- **STP-UDGAT: Spatial-Temporal-Preference User Dimensional Graph Attention Network for Next POI Recommendation**
🕒 9:33am - 9:50am, Oct 23
- **tdGraphEmbed: Temporal Dynamic Graph-Level Embedding**
🕒 9:50am - 10:07am, Oct 23
📍 `
- **Examining the Additivity of Top-k Query Processing Innovations**
🕒 10:07am - 10:24am, Oct 23
- **An NVM SSD-Optimized Query Processing Framework**
🕒 10:24am - 10:41am, Oct 23
- **Short Break**
🕒 10:41am - 10:58am, Oct 23

Posters 1

🕒 9:16am - 11:08am, Oct 23

📍 Sligo

Posters & Demos

Session Chairs: Stefan Halfpap & André Carvalho (9:16-10:12 am)

14 Subsessions

- **Large scale long-tailed product recognition system at Alibaba**
🕒 9:16am - 9:24am, Oct 23
- **OFFER: A Motif Dimensional Framework for Network Representation Learning**
🕒 9:24am - 9:32am, Oct 23
- **Autonomous Predictive Modeling via Reinforcement Learning**
🕒 9:32am - 9:40am, Oct 23
- **Optimal End-Biased Histograms for Hierarchical Data**
🕒 9:40am - 9:48am, Oct 23
- **Smarter and Safer Traffic Signal Controlling via Deep Reinforcement Learning**
🕒 9:48am - 9:56am, Oct 23
- **Empirical Analysis of Impact of Query-Specific Customization of nDCG: A Case-Study with Learning-to-Rank Methods**
🕒 9:56am - 10:04am, Oct 23
- **A Capsule Network-based Model for Learning Node Embeddings**
🕒 10:04am - 10:12am, Oct 23
- **Maximum Signed (k,r)-Truss Identification in Signed Networks**
🕒 10:12am - 10:20am, Oct 23
- **Diverse Enumeration of Maximal Cliques**
🕒 10:20am - 10:28am, Oct 23
- **RotaryDS: Fast Storage for Massive Data Streams via a Rotation Storage Model**
🕒 10:28am - 10:36am, Oct 23
- **Enhanced Story Representation by ConceptNet for Predicting Story Endings**
🕒 10:36am - 10:44am, Oct 23
- **A Human-in-the-Loop Approach to Malware Author Classification**
🕒 10:44am - 10:52am, Oct 23
- **Deriving Geolocations in Wikipedia**
🕒 10:52am - 11:00am, Oct 23
- **A Cost Estimation Technique for Recursive Relational Algebra**
🕒 11:00am - 11:08am, Oct 23

9:33am

Graphs

🕒 9:33am - 10:58am, Oct 23

📍 Dublin

Research Track Long Papers

Session Chairs: Rana Hussein

5 Subsessions

- **A Graph Matching Attack on Privacy-Preserving Record Linkage**
🕒 9:33am - 9:50am, Oct 23
- **Anomaly Subgraph Detection with Feature Transfer**
🕒 9:50am - 10:07am, Oct 23

- **Hypergraph Random Walks, Laplacians, and Clustering**
🕒 10:07am - 10:24am, Oct 23
- **Spectral Relaxations and Fair Densest Subgraphs**
🕒 10:24am - 10:41am, Oct 23
- **CommDGI: Community Detection Oriented Deep Graph Infomax**
🕒 10:41am - 10:58am, Oct 23

2:52pm

Demos 2

🕒 2:52pm - 5:32pm, Oct 23

📍 Sligo

Posters & Demos

Session Chairs: Zhenyu Wen & Amar Viswanathan (2:52-4:12 pm)

Rajiv Ranjan & Amar Viswanathan (4:12-5:32 pm)

20 Subsessions

- **Active Search using Meta-Bandits**
🕒 2:52pm - 3:00pm, Oct 23
- **ArXivDigest: A Living Lab for Personalized Scientific Literature Recommendation**
🕒 3:00pm - 3:08pm, Oct 23
- **Exploration of Dynamic Query-Based Load Balancing for Partially Replicated Database Systems with Node Failures**
🕒 3:08pm - 3:16pm, Oct 23
- **Vallum-Med: Protecting Medical Data in Cloud Environments**
🕒 3:16pm - 3:24pm, Oct 23
- **PrivacyCheck v2: A Tool that Recaps Privacy Policies for You**
🕒 3:24pm - 3:32pm, Oct 23
- **Semantic Search over Structured Data**
🕒 3:32pm - 3:40pm, Oct 23
- **STREAMER: a Powerful Framework for Continuous Learning in Data Streams**
🕒 3:40pm - 3:48pm, Oct 23
- **CovidExplorer: A Multi-faceted AI-based Search and Visualization Engine for COVID-19 Information**
🕒 3:48pm - 3:56pm, Oct 23
- **PandaSQL: Parallel Randomized Triangle Enumeration with SQL Queries**
🕒 3:56pm - 4:04pm, Oct 23
- **Active Hazard Observation via Human in the Loop Social Media Analytics System**
🕒 4:04pm - 4:12pm, Oct 23
- **TiCCo: Time-Centric Content Exploration**
🕒 4:12pm - 4:20pm, Oct 23
- **IAI MovieBot: A Conversational Movie Recommender System**
🕒 4:20pm - 4:28pm, Oct 23
- **Attribution IQ: Scalable Game Theoretic Attribution in Web Analytics**
🕒 4:28pm - 4:36pm, Oct 23
- **Sample Driven Data Mapping for Linked Data and Web APIs**
🕒 4:36pm - 4:44pm, Oct 23

- **Multimodal Knowledge Graph for Deep Learning Papers and Code**
🕒 4:44pm - 4:52pm, Oct 23
- **Weaving Text into Tables**
🕒 4:52pm - 5:00pm, Oct 23
- **WebLens: Towards Interactive Large-scale Structured Data Profiling**
🕒 5:00pm - 5:08pm, Oct 23
- **Towards Rich Query Blockchain Database**
🕒 5:08pm - 5:16pm, Oct 23
- **Computing and Illustrating Query Rewritings on Path Views with Binding Patterns**
🕒 5:16pm - 5:24pm, Oct 23
- **Short Break**
🕒 5:24pm - 5:32pm, Oct 23

3:00pm

Privacy

🕒 3:00pm - 4:08pm, Oct 23

📍 Dublin

Research Track Long Papers

Session Chairs: Ioannis Chrysakis

4 Subsessions

- **Privacy-Preserving Classification with Secret Vector Machines**
🕒 3:00pm - 3:17pm, Oct 23
- **Seed-free Graph De-anonymization with Adversarial Learning**
🕒 3:17pm - 3:34pm, Oct 23
- **Index Obfuscation for Oblivious Document Retrieval in a Trusted Execution Environment**
🕒 3:34pm - 3:51pm, Oct 23
- **Fair Class Balancing: Enhancing Model Fairness without Observing Sensitive Attributes**
🕒 3:51pm - 4:08pm, Oct 23

Data mining II

🕒 3:00pm - 4:25pm, Oct 23

📍 Cork

Research Track Long Papers

Session Chairs: Ilaria Tiddi

5 Subsessions

- **OPHiForest: Order Preserving Hashing Based Isolation Forest for Robust and Scalable Anomaly Detection**
🕒 3:00pm - 3:17pm, Oct 23
- **Hierarchical Active Learning with Overlapping Regions**
🕒 3:17pm - 3:34pm, Oct 23
- **Fast and Scalable Outlier Detection with Sorted Hypercubes**
🕒 3:34pm - 3:51pm, Oct 23

- **Deep Generative Positive-Unlabeled Learning under Selection Bias**
🕒 3:51pm - 4:08pm, Oct 23
- **Matching in Selective and Balanced Representation Space for Treatment Effects Estimation**
🕒 4:08pm - 4:25pm, Oct 23

Search & Ranking 4

🕒 3:00pm - 4:31pm, Oct 23
📍 Waterford

Research Track Short Papers

Session Chairs: Jun Xu

7 Subsessions

- **Learning to Re-Rank with Contextualized Stopwords**
🕒 3:00pm - 3:13pm, Oct 23
- **A Comparison of Top-k Threshold Estimation Techniques for Disjunctive Query Processing**
🕒 3:13pm - 3:26pm, Oct 23
- **An Empirical Study on Clarifying Question-Based Systems**
🕒 3:26pm - 3:39pm, Oct 23
- **The Impact of Negative Relevance Judgments on NDCG**
🕒 3:39pm - 3:52pm, Oct 23
- **Query Abandonment Prediction with Recurrent Neural Models of Mouse Cursor Movements**
🕒 3:52pm - 4:05pm, Oct 23
- **Deep Metric Learning Based on Rank-sensitive Optimization of Top-k Precision**
🕒 4:05pm - 4:18pm, Oct 23
- **Short Break**
🕒 4:18pm - 4:31pm, Oct 23

Recommender Systems

🕒 3:00pm - 4:42pm, Oct 23
📍 Athlone

Applied Research Track

Session Chairs: Giuseppe Rizzo

6 Subsessions

- **Decoupled Graph Convolution Network for Inferring Substitutable and Complementary Items**
🕒 3:00pm - 3:17pm, Oct 23
- **P-Companion: A Principled Framework for Diversified Complementary Product Recommendation**
🕒 3:17pm - 3:34pm, Oct 23
- **Ranking User Attributes for Fast Candidate Selection in Recommendation Systems**
🕒 3:34pm - 3:51pm, Oct 23
- **EdgeRec: Recommender System on Edge in Mobile Taobao**

🕒 3:51pm - 4:08pm, Oct 23

- **Zero-Shot Heterogeneous Transfer Learning from Recommender Systems to Cold-Start Search Retrieval**

🕒 4:08pm - 4:25pm, Oct 23

- **GraphSAIL: Graph Structure Aware Incremental Learning for Recommender Systems**

🕒 4:25pm - 4:42pm, Oct 23

4:08pm

Fraud, cyberbullying and hate speech

🕒 4:08pm - 5:16pm, Oct 23

📍 Dublin

Research Track Long Papers

Session Chairs: Shrestha Ghosh

4 Subsessions

- **Towards Generalizable Deepfake Detection with Locality-aware AutoEncoder**

🕒 4:08pm - 4:25pm, Oct 23

- **Unsupervised Cyberbullying Detection via Time-Informed Gaussian Mixture Model**

🕒 4:25pm - 4:42pm, Oct 23

- **SWE2: SubWord Enriched and Significant Word Emphasized Framework for Hate Speech Detection**

🕒 4:42pm - 4:59pm, Oct 23

- **Enhancing Graph Neural Network-based Fraud Detectors against Camouflaged Fraudsters**

🕒 4:59pm - 5:16pm, Oct 23

4:25pm

Retrieval and knowledge graphs

🕒 4:25pm - 5:50pm, Oct 23

📍 Cork

Research Track Long Papers

Session Chairs: Jie Yang

5 Subsessions

- **News Recommendation with Topic-Enriched Knowledge Graphs**

🕒 4:25pm - 4:42pm, Oct 23

- **The Impact of Negative Triple Generation Strategies and Anomalies on Knowledge Graph Completion**

🕒 4:42pm - 4:59pm, Oct 23

- **Uncovering Semantic Bias in Neural Network Models Using a Knowledge Graph**

🕒 4:59pm - 5:16pm, Oct 23

- **Beyond 512 Tokens: Siamese Multi-depth Transformer-based Hierarchical Encoder for Long-Form Document Matching**

🕒 5:16pm - 5:33pm, Oct 23

- **Query Understanding via Intent Description Generation**

🕒 5:33pm - 5:50pm, Oct 23

4:31pm

Data Analytics 3

🕒 4:31pm - 5:49pm, Oct 23

📍 Waterford

Research Track Short Papers

Session Chairs: Meng Jiang

6 Subsessions

- **Muse: Multi-query Event Trend Aggregation**
🕒 4:31pm - 4:44pm, Oct 23
- **Calibration of Google Trends Data**
🕒 4:44pm - 4:57pm, Oct 23
- **Estimating Topic Difficulty Using Normalized Discounted Cumulated Gain**
🕒 4:57pm - 5:10pm, Oct 23
- **Sample Optimization For Display Advertising**
🕒 5:10pm - 5:23pm, Oct 23
- **Recursive Balanced k-Subset Sum Partition for Rule-constrained Resource Allocation**
🕒 5:23pm - 5:36pm, Oct 23
- **Short Break**
🕒 5:36pm - 5:49pm, Oct 23

4:42pm

Search

🕒 4:42pm - 5:50pm, Oct 23

📍 Athlone

Applied Research Track

Session Chairs: Ricardo Baeza-Yates

4 Subsessions

- **Efficient Neural Query Auto Completion**
🕒 4:42pm - 4:59pm, Oct 23
- **Learning to Rank in the Position Based Model with Bandit Feedback**
🕒 4:59pm - 5:16pm, Oct 23
- **Relevance Ranking for Realtime Tweet Search**
🕒 5:16pm - 5:33pm, Oct 23
- **DeText: A Deep Text Ranking Framework at LinkedIn**
🕒 5:33pm - 5:50pm, Oct 23

5:16pm

Machine learning topics II

🕒 5:16pm - 6:58pm, Oct 23

📍 Dublin

Research Track Long Papers

Session Chairs: Giuseppe Cuccu

6 Subsessions

- **Neural Formatting for Spreadsheet Tables**
🕒 5:16pm - 5:33pm, Oct 23
- **Learning to Selectively Update State Neurons in Recurrent Networks**
🕒 5:33pm - 5:50pm, Oct 23
- **Towards Plausible Differentially Private ADMM Based Distributed Machine Learning**
🕒 5:50pm - 6:07pm, Oct 23
- **Semi-Supervised Max-Sum Clustering**
🕒 6:07pm - 6:24pm, Oct 23
- **A Closer Look into Task Relationship: A Topic-Wise Multi-Task Sparsity Model**
🕒 6:24pm - 6:41pm, Oct 23
- **EPNet: Learning to Exit with Flexible Multi-Branch Network**
🕒 6:41pm - 6:58pm, Oct 23

5:32pm

Posters 2

🕒 5:32pm - 7:00pm, Oct 23

📍 Sligo

Posters & Demos

Session Chairs: Rajiv Ranjan & Altigran da Silva (5:32-6:20 pm)

Douglas W. Oard & Altigran da Silva (6:20-7:00 pm)

11 Subsessions

- **Exploiting Class Labels to Boost Performance on Embedding-based Text Classification**
🕒 5:32pm - 5:40pm, Oct 23
- **Structured Knowledge: Have we made progress? An extrinsic study of KB coverage over 19 years**
🕒 5:40pm - 5:48pm, Oct 23
- **Towards Inferring Queries from Simple and Partial Provenance Examples**
🕒 5:48pm - 5:56pm, Oct 23
- **Two Test Collections for Retrieval Using Named Entity Markup**
🕒 5:56pm - 6:04pm, Oct 23
- **ALEX: Active Learning based Enhancement of a Classification Model's EXplainability**
🕒 6:04pm - 6:12pm, Oct 23
- **Semi-supervised Consensus Clustering Based on Frequent Closed Itemsets**
🕒 6:12pm - 6:20pm, Oct 23
- **Improving Anchor-based Explanations**
🕒 6:20pm - 6:28pm, Oct 23
- **User Taste-Aware Image Search**
🕒 6:28pm - 6:36pm, Oct 23
- **Truth be Told: Fake News Detection Using User Reactions on Reddit**
🕒 6:36pm - 6:44pm, Oct 23
- **Exploiting Common Neighbor Graph for Link Prediction**
🕒 6:44pm - 6:52pm, Oct 23

● **Ranking Multiple Choice Question Distractors using Semantically Informed Neural Networks**

🕒 6:52pm - 7:00pm, Oct 23

5:49pm

Fairness & Bias

🕒 5:49pm - 6:54pm, Oct 23

📍 Waterford

Research Track Short Papers

Session Chairs: Qingyao Ai

5 Subsessions

● **Active Query of Private Demographic Data for Learning Fair Models**

🕒 5:49pm - 6:02pm, Oct 23

● **Analysis of Multivariate Scoring Functions for Automatic Unbiased Learning to Rank**

🕒 6:02pm - 6:15pm, Oct 23

● **Denoising individual bias for a fairer binary submatrix detection**

🕒 6:15pm - 6:28pm, Oct 23

● **Joint Estimation of User And Publisher Credibility for Fake News Detection**

🕒 6:28pm - 6:41pm, Oct 23

● **Fairness-Aware Learning with Prejudice Free Representations**

🕒 6:41pm - 6:54pm, Oct 23

5:50pm

Graphs & network embeddings

🕒 5:50pm - 6:58pm, Oct 23

📍 Cork

Research Track Long Papers

Session Chairs: Michael Cochez

4 Subsessions

● **Characteristic Functions on Graphs: Birds of a Feather, from Statistical Descriptors to Parametric Models**

🕒 5:50pm - 6:07pm, Oct 23

● **Predicting Economic Growth by Region Embedding: A Multigraph Convolutional Network Approach**

🕒 6:07pm - 6:24pm, Oct 23

● **Collective Embedding with Feature Importance: A Unified Approach for Spatiotemporal Network Embedding**

🕒 6:24pm - 6:41pm, Oct 23

● **Meta-context Aware Random Walks for Heterogeneous Network Representation Learning**

🕒 6:41pm - 6:58pm, Oct 23

Advertising II

🕒 5:50pm - 6:58pm, Oct 23

📍 Athlone

Applied Research Track

Session Chairs: Ricardo Baeza-Yates

4 Subsessions

- **Learning to Create Better Ads: Generation and Ranking Approaches for Ad Creative Refinement**
🕒 5:50pm - 6:07pm, Oct 23
- **Learning to Infer User Hidden States for Online Sequential Advertising**
🕒 6:07pm - 6:24pm, Oct 23
- **Spending Money Wisely: Online Electronic Coupon Allocation based on Real-Time User Intent Detection**
🕒 6:24pm - 6:41pm, Oct 23
- **Impression Pacing for Jobs Marketplace at LinkedIn**
🕒 6:41pm - 6:58pm, Oct 23

7:00pm

Keynote Talk: Timnit Gebru

🕒 7:00pm - 8:00pm, Oct 23

📍 Dublin

Keynote talks

Lessons from Archives – Strategies for Collecting Sociocultural Data in Machine Learning

A growing body of work shows that many problems in fairness, accountability, transparency, and ethics in machine learning systems are rooted in decisions surrounding the data collection and annotation process. We argue that a new specialization should be formed within machine learning that is focused on methodologies for data collection and annotation: efforts that require institutional frameworks and procedures. Specifically for sociocultural data, parallels can be drawn from archives and libraries. Archives are the longest standing communal effort to gather human information and archive scholars have already developed the language and procedures to address and discuss many challenges pertaining to data collection such as consent, power, inclusivity, transparency, and ethics privacy. We discuss these five key approaches in document collection practices in archives that can inform data collection in sociocultural machine learning.

8:00pm

Closing session

🕒 8:00pm - 9:00pm, Oct 23

📍 Dublin

Plenary sessions