Newsletter

ECMLPKDD

Würzburg 16.–20.09.2019

Monday, 16.09.2019

Opening

The opening ceremony and the first keynote speech by Sumit Gulwani will take place in Würzburg's Neubau Church.

After that, the opening reception is hosted in Würzburg's landmark: the UNESCO World Heritage Site Residence Palace. The baroque castle is not only famous for its breathtaking grand staircase with the world's largest ceiling fresco by the Venetian artist Tiepolo, but also for the perfect symbiosis of different European architectural influences.

Time Table

Registration	08:00 - 09:00	PhD Forum	14:00 - 15:00
PhD Forum	09:00 - 10:30	Workshop/Tutorial	14:00 - 15:00
Workshop/Tutorial	09:00 - 10:30	Coffee Break	15:00 - 15:20
Coffee Break	10:30 - 11:00	PhD Forum	15:20 - 16:20
PhD Forum	11:00 - 12:40	Workshop/Tutorial	15:20 - 16:20
Workshop/Tutorial	11:00 - 12:40	Opening & Keynote	17:30 - 19:00
Snack Break	12:40 - 14:00	Reception	19:30 - 22:00

Program Highlights

Today's day program includes the PhD Forum for junior PhD students in room 1.013 as well as workshops and tutorials on all floors of building Z6 on Hubland Campus. There are many different workshops, e.g. on music, financial data, geography, and green data mining.

Sumit Gulwani
Microsoft Research

Key Note
Programming by Examples

Sumit Gulwani is a computer scientist seeking connections: between ideas, between research & practice, and with people with varied roles. He is the inventor of many intent-understanding, programming-by-example, and programming-by-natural-language technologies including the popular Flash Fill feature in Excel used by hundreds of millions of people. He founded and currently leads the PROSE research and engineering team that develops APIs for program synthesis and incorporates them into various products. He was awarded the ACM SIGPLAN Robin Milner Young Researcher Award in 2014 for his pioneering contributions to end-user programming and intelligent tutoring systems. He obtained his PhD in Computer Science from UC-Berkeley, and was awarded the ACM SIGPLAN Outstanding Doctoral Dissertation Award.

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Addendum

At the time of printing the booklet and badge, not all information was available or in its final state. Below, we list the new information and the resulting corrections to the programme.

Best student KDD paper
The award for best student KDD paper goes to:

FastPoint: Scalable Deep Point Processes
Ali Caner Türkmen (Bogazici University), Yuyang Wang (Amazon Research), and Alexander J. Smola (Amazon Research)

We propose FastPoint, a novel multivariate point process that enables fast and accurate learning and inference. FastPoint uses deep recurrent neural networks to capture complex temporal dependency patterns among different marks, while self-excitation dynamics within each mark are modeled with Hawkes processes. This results in substantially more efficient learning and scales to millions of correlated marks with superior predictive accuracy. Our construction also allows for efficient and parallel sequential Monte Carlo sampling for fast predictive inference. FastPoint outperforms baseline methods in prediction tasks on synthetic and real-world high-dimensional event data at a small fraction of the computational cost.

The paper will be presented on Thursday, from 10:00 to 10:30 (Room 0.004 (AOK-Hörsaal))

As a result, the presentations in the following session will move up by 20 minutes, to produce the following schedule:
Probabilistic Models 2,
Thursday, 14:00 – 15:40 (room 1.011)
14:00 – 14:20: Fine-Grained Explanations using Markov Logic, Al Farabi et al.
14:20 – 14:40: Neural Control Variates for Monte Carlo Variance Reduction, Wan et al.
14:40 – 15:00: Grouped Gaussian Processes for Solar Power Prediction, Dahl & Bonilla
15:00 – 15:20: Bayesian Generalized Horseshoe Estimation of Generalized Linear Models, Schmidt & Makalic
15:20 – 15:40: Stochastic Gradient Hamiltonian Monte Carlo with variance reduction for Bayesian inference, Li et al.

Best student ML paper
The award for best student ML paper goes to:

Agnostic feature selection
Guillaume Doquet and Michèle Sebag (TAU CNRS - INRIA - LRI - Université Paris-Saclay)

Unsupervised feature selection is mostly assessed along a supervised learning setting, depending on whether the selected features efficiently permit to predict the (unknown) target variable. Another setting is proposed in this paper: the selected features aim to efficiently recover the whole dataset. The proposed algorithm, called AgnoS, combines an AutoEncoder with structural regularizations to sidestep the combinatorial optimization problem at the core of feature selection. The extensive experimental validation of AgnoS on the scikit-feature benchmark suite demonstrates its ability compared to the state of the art, both in terms of supervised learning and data compression.

The paper will be presented on Tuesday, from 10:00 to 10:30 (Room 0.004 (AOK-Hörsaal))

As a result, the last three presentations in the following session will move up by 20 minutes, to produce the following schedule:
Autoencoder and Clustering,
Tuesday, 16:20 – 17:40 (Room 0.004 (AOK-Hörsaal))
16:20 – 16:40: A Framework for Deep Constrained Clustering - Algorithms and Advances, Zhang et al.
16:40 – 17:00: From abstract items to latent spaces to observed data and back: Compositional Variational Auto-Encoder, Berger & Sebag

17:00 – 17:20: Deep Collective Matrix Factorization for Augmented Multi-View Learning, Mariappan & Rajan
17:20 – 17:40: Improving latent variable descriptiveness by modelling rather than ad-hoc factors, Mansbridge et al.

New Keynote Talk Wednesday
Palaeontology as a computational science, Indre Zliobaite (University of Helsinki), Wednesday 9:00 – 10:00, 0.004 (AOK-Hörsaal)

Palaeontology studies the history of life and evolutionary principles. While biology focuses on how life is, palaeontology is concerned with how life forms change. This is particularly interesting in the context of today's rapidly changing world. The main material for palaeontological studies comes from fossils – remains, traces or impressions of organisms that lived in the past, preserved in rocks. Fossils are found in many places around the world where ancient sediments have been exposed on the surface. Palaeontology has long been a big data discipline; global fossil databases have been around for many decades. Perhaps half of palaeontology research today is computationally-driven, it strongly relies on advanced computational methods, including those of machine learning, for analysing ancestral relationships, biogeographic patterns of life history, evolutionary processes of life and its environmental concepts. This talk will discuss what there is to compute in palaeontology, why it matters, and what fundamental questions about the world in the past and today evolutionary palaeontology aims at addressing.

Biography:
Indre Zliobaite is an Assistant professor at the University of Helsinki, Finland. Her background is in machine learning with evolving data. In Helsinki she leads a research group called Data science and evolution, which focuses on computational analyses of the changing world. For the last five years, Indre has been actively involved in evolutionary palaeontology research studying the mammalian fossil record. Results of this work have been published in Nature, PNAS, Philosophical Transactions of the Royal Society and other prime venues for natural sciences. By now, Indre is as a palaeontologist as she is a computer scientist. She is a long member of ECML PKDD community. She has taken chairing roles in several editions of the conference and served as a member of the Steering Committee for ECML PKDD.

Leaflet
The timing of the following session was listed incorrectly (for the last three presentations) in the badge:
Social Networks & Graphs 3,
Wednesday, 14:00 – 16:00 (Room 0.002)
14:00 - 14:20: User-Guided Clustering in Heterogeneous Information Networks via Motif-Based Comprehensive Transcription, Shi et al.
14:20 - 14:40: Finding lasting dense graphs, Semertzidis et al.
15:00 - 15:20: Model-Free Inference of Diffusion Networks, Hu et al.
15:20 - 15:40: Counts-of-Counts Similarity for prediction and search in relational data, Jaeger et al.
15:40 - 16:00: Robust active attacks on social graphs, Mauw et al.

Workshop Room Change
Workshop *Second International Workshop on Knowledge Discovery and User Modeling for Smart Cities* is taking place in room 2.004 instead of 2.010.