UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

Seminar Announcement

DIPARTIMENTO DI INFORMATICA

PhD Program in Computer Science and Mathematics

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Università di Torino

Wednesday July 24, 2024

15:00

Room Goedel

Dept. of Computer Science

Two (small) contributions towards the democratization of ML: fast (and differentially private) parameterless co-clustering and fair semi-supervised learning

In this talk I will fist present a very short overview of my recent research works, then I will focus on two main contributions. In the first part, I will address the problem of tensor co-clustering, an unsupervised learning technique that has been proven useful in many application scenarios, such as recommender systems, biological data analysis and the analysis of complex and evolving networks. We proposed a new simplified objective function with the ability of discovering an arbitrary and a priori unspecified number of good-quality co-clusters, allowing for a novel prototype-based optimization strategy that enables the fast execution of matrix and higher-order tensor co-clustering. I will also introduce some new and still unplublished results on differentially private co-clustering. The second part of my talk is about semi-supervised learning, a class of machine learning methods that showed its potential in many real-world applications where only few labeled examples are available. We proposed a fair semi-supervised representation learning architecture that leads to fair and accurate classification results even in very challenging scenarios with few labeled (but biased) instances.

Ruggero G. Pensa received the M.Sc. degree in computer engineering from the Politecnico of Turin, Italy, in 2003, and the Ph.D. degree in computer science from INSA, Lyon, France, in 2006. He has been post-doc fellow in several European institutions, including the University of St-Etienne in France and the CNR in Italy. He is currently an Associate Professor (in sabbatical leave) with the Department of Computer Science, University of Turin, Italy and visiting researcher at University of Bari, with the KDDE group. His main research interests include machine learning, deep learning, data science, privacy and data protection, social network analysis, and spatial-temporal data analysis. He served in the program committee of many international conferences on data mining and machine learning, including KDD, IEEE ICDM, ACM CIKM, SIAM SDM, IJCAI, AAAI, and ECML PKDD. He is a member of the Editorial Board of the Data Mining and Knowledge Discovery Journal and the Machine Learning Journal, and served as area chair for ECML PKDD and as chair for Euro-Par.