



SEMINAR BY PROF. MASSIMO MELUCCI
(Dipartimento di Ingegneria dell'Informazione-DEI)

January 9th, 2020

3:00 p.m. – 4:00 p.m.

Seminar Hall at VIMM (Via G. Orus, 2 - Padova)

Title of the Seminar: A Note on the Use of Topic Modeling and Deep Learning to Advance Information Retrieval

Abstract: Information Retrieval (IR) is the complex of theories, models, and technologies aiming to retrieve relevant information to user's information needs. IR has recently made significant advances in understanding the content of multimedia documents and user queries. In this talk, I'll illustrate some noticeable advances, in particular, how topic modeling helps understand content and how the use of deep learning helps overcome some obstacles.

Bio: Massimo Melucci studied Statistical Science at the University of Padova. In 1996 he received the PhD degree in Computer Engineering from the University of Padova where he is Associate Professor at the Department of Information Engineering.

Since the early 1990s, Massimo Melucci has been carrying out research in Information Retrieval (IR), that is, the automated retrieval of information relevant to users' needs. In particular, he is interested in modeling, implementing and experimenting advanced methods for indexing, retrieving and ranking documents, recently inspired to physics and engineering disciplines. He has been researching into the correspondence between IR and Quantum Mechanics (QM) both from a theoretical and an experimental perspective, because effective contextual IR systems can be designed within the theoretical framework of QM. Indeed, QM provides a theoretical framework which well describes how contextual factors influence the user's information need and the retrieval of relevant documents. In the intersection between QM and detection theory, he found that the maximum effectiveness stated by the Probability Ranking Principle for IR can be further improved without additional evidence for estimating the parameters of a probabilistic model.

Massimo Melucci coordinated the EU VII FP Marie Curie Action IRSES Project "QONTEXT" from 2010 to 2013 and he is currently coordinating the H2020 Marie Slodowska Curie Action ITN project "QUARTZ" (Quantum Information Access and Retrieval Theory) since January 1, 2017 until December 31, 2020. He authored about 170 publications and, in particular, two research books. Massimo Melucci teaches Databases, Information Retrieval, and Computing Methods for Data Science at the University of Padova.

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