



I Seminari su “Information Technology Outlook” – Dottorato di Ricerca in Informatica e Matematica

AVVISO DI SEMINARIO

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Towards green AI-based software systems: an architecture-centric approach

Nowadays, Artificial Intelligence (AI) is pervasive in the world we live in. However, the processes of training and using AI models demand high computational resources, especially considering the large amounts of data required.

To cope with the increasing environmental impact that AI-based systems have, we must build AI models and AI-based systems that are environmentally friendly and inclusive, which is known as green AI. While the last few years have witnessed calls to act upon the huge energy consumption of AI-based systems, evidence shows that current approaches to green AI do not focus on the impact that the system architecture has on energy efficiency. This is in contrast to current practices applied in traditional software systems' development, where architectural decision-making has been reported as a key approach to improve any quality-related aspect of a software system, as energy efficiency is.

In this talk, I present the research agenda of the GAISSA project, aiming to provide data scientists and software engineers tool-supported, architecture-centric methods for the modelling and development of green AI-based systems and thus facilitate the ecological transition towards energy-efficient software systems.

Assistant Professor at UPC-BarcelonaTech since January 2020. PhD in Computing. He was a Post-Doctoral Fellow of the European Research Consortium for Informatics and Mathematics (2016-2018) and operative project manager (2018-2019) in Fraunhofer IESE (Germany). His interests include Empirical Software Engineering, Green AI, AI-based systems, Software Analytics, and Reference Architectures. In EU framework programmes, he acted as Evaluation WP leader in Q-Rapids (H2020, RIA), and participated in DESIRA (H2020, RIA).