COST CA20120 - INTERACT Training Day:

Recent Advances in Data Engineering for Networking

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Lecturer's Information

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Lecture Title: Recent Advances in Data Engineering for Networking

Lecture Abstract (250 words): To address the complex issues that larger and highly integrated networks face in the design, analysis, deployment and management phases, recent advances in data science and engineering technologies in both academia and industry have spurred the adoption of various Artificial Intelligence (AI)/Machine Learning (ML) platforms and frameworks in telecommunication network infrastructures. In this tutorial, we aim to provide a comprehensive and thorough overview of the recent advances in data engineering frameworks and link the capabilities of the data engineering ecosystem with a possible connection to future telecommunication systems in the context of network management and orchestration. Some special features of this tutorial are: a clear link between the data engineering ecosystem (including data connection, data ingestion, data processing & analysis, data storage, data monitoring & visualization and data management & orchestration frameworks) and recent developments in networking, an overview of standardization efforts in network management and orchestration and how these can be related to data engineering frameworks, the relationship to data science frameworks, ML platforms used in the industry, and related data engineering use cases for telecommunications networks will be discussed. Two examples on log management in NFV service orchestration and AI/ML-driven scaling of digital service will also be demonstrated. Finally, gap analysis, challenges, and future directions will be discussed.

CV (250 words):

JOSEP MANGUES-BAFALLUY received the PhD degree in Telecommunications in 2003 from the Technical University of Catalonia (UPC). He is Senior Researcher and Head of the Communication Networks (COMNET) Division of the Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), which is currently composed of 28 people working on optical networks and systems and mobile networks. Prior to that, he coordinated the activities of the IP Technologies Area of the CTTC since June 2003. He has published over 120+ journals/magazines and international conference papers (e.g., IEEE Communications Magazine, IEEE Transactions on Mobile Computing, Ad hoc Networks, IEEE Access, IEEE Netsoft, IEEE Infocom, IEEE ICC) through collaborations with multiple international research groups. He has given keynotes in conferences/workshops (MONAMI 2015, Mobislice

2020). In addition to academia, he has also given talks in various industrial events (e.g., LTE World Summit, Small Cells World Summit). Furthermore, he frequently carries out communication actions for society at large (e.g., talks in open science weeks, book co-authorship). He has also co-authored two patents and various ETSI contributions and IETF drafts.

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