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**Ph.D. Seminar in Electronics, Computer Science and Electrical Engineering and
Biomedical Engineering**

SEMINAR

Data Analysis, Knowledge Dissemination, and Technology Development as a Service: The National Facility for Data Handling and Analysis at Human Technopole

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Abstract: The National Facility for Data Handling and Analysis (NF-DATA) is one of the five National Facilities recently established at Human Technopole to support the Italian biomedical research community. Its primary mission is to provide analysis services in the areas of bioinformatics and image analysis to Italian researchers, but it is also tasked with delivering training and collaborating on technological development. After giving an overview of the structure and operation of the National Facilities, we will present some of the tools and technologies that are being developed within NF-DATA to support its activities. In particular, we will describe the ecosystem of Nextflow-based analysis pipelines that implement our analysis services, an automated reporting platform to disseminate analysis results, and an AI agent that assists facility users in the exploration and interpretation of highly complex pipeline outputs.

Bio: **Alberto** is a bioinformatics scientist with a background in computer science and bioengineering. He is an expert in the development of analysis tools and pipelines for biological data, and in particular for genomic and transcriptomic data generated by high-throughput sequencing technologies. After obtaining a PhD in Bioengineering at the University of Pavia, Alberto held positions at Children's Hospital Boston and Harvard Medical School, working initially in the Medical Informatics field before transitioning to bioinformatics. He then moved to the Department of Molecular Genetics and Microbiology at the University of Florida. In 2014 he joined the Bioinformatics Core of the Interdisciplinary Center for Biotechnology Research, of which he became the director in 2019. Alberto joined Human Technopole in 2024 as the Head of the National Facility for Data Handling and Analysis. In this role, he oversees the operation of the facility as a whole, and directly manages its Omics Analysis Infrastructural Unit.

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