A SERIES OF VOICES SHAPING SUSTAINABLE CHANGE

Meet the STEP-CHANGErs

Thomas Martinoli: **Automatic Urban Tree Inventory Generation from Very High Resolution Multispectral Satellite Imagery via Point-Supervised Deep Learning**
Urban tree inventories are essential for planning resilient and sustainable cities. However, inventories are often incomplete or outdated, limiting reliable assessments of ecosystem services, such as reducing air pollution, mitigating the urban heat island effect, and providing psychological benefits for citizens. Therefore, this study introduces a deep learning framework that leverages very-high-resolution multispectral satellite imagery to automatically generate accurate urban tree inventories. A deep learning model is trained on a developed dataset of heterogeneous urban landscapes in Lombardy, Italy. This approach enables precise localization of individual trees in complex environments while reducing manual effort. Results demonstrate strong precision and robust performance, supporting scalable, data-driven strategies for urban ecosystem monitoring and planning.

Beatrice Dal Luogo Pio: **Designing a Path to Reduce Water Pollution from the Textile Lifecycle: a Cross-Value-Chain Exploration**
Microplastics released from garments pose a complex challenge to society and environment. The scope of my research is to mitigate the environmental pollution caused by the release of plastic microfibers from garments to water and air during their entire lifecycle.
These contaminants pose a global concern due to their persistence and ubiquity, moreover they act as carriers for toxic chemicals and pathogens. Despite the growing interest in the topic, up to now there are not policies in place addressed to microplastics unintentionally release from textiles. This study aims to fill the knowledge gap regarding the flows of fibers in the textile lifecycle and to support the design of sustainable technologies and solutions to mitigate their release.

The event will be followed by a networking aperitif.

9th April 2026
5:00 - 6:00 pm
Alpha Room, Building 24, Campus Leonardo

Register here

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