Let's Take Back Control: A Journey through a Novel Generation of Control Techniques for Performance Engineering

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Seminar room, Polo Ferrari 2, Via Sommarive 9, Trento

Speaker: Daniele Masti (IMT Lucca)

Optimizing the performance of complex systems has always been a central issue for the control theory community. However, ideas and tools from this field often require very precise assumptions and extensive tuning to perform well, making them unsuited for a non-specialist practitioner.

In recent times, however, the influx of the machine learning community has brought a wave of renewal in the field, making many of these powerful methods finally applicable outside academic examples.

In this talk, I will discuss a journey at the border between control theory and machine learning, from classical system identification and model-based control to modern autotuning data-driven techniques. I will also shed light on how this novel generation of much more user-friendly techniques can easily be applied to improve the performance of a large class of systems.