UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

**DOTTORATO DI RICERCA / PHD PROGRAM IN**
**INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING**

# Seminar announcement

**Monday 16 September 2024, Time: 15:00 - 17:00,**
**Room AULA SEMINARI, Floor 1, Building 3, DIETI** - Via Claudio, 21 – NAPOLI
Online on MS Teams:
Link: https://teams.microsoft.com/l/meetup-join/19%3ameeting_NmYyZWZjYjQtNTg2OS00ZDM0LTljMzItNzA5ZGVjZGYwZjkx%40thread.v2/0?context=%7b%22Tid%22%3a%222fcfe26a-bb62-46b0-b1e3-28f9da0c45fd%22%2c%22Oid%22%3a%224ac86174-8d70-4025-b89b-c5f3edfdef80%22%7d


## Prof. Mauro Salazar

Eindhoven University of Technology, Eindhoven, Netherlands


# From ACE Technologies to Sustainable, Accessible and Equitable Urban Mobility: An Optimization Journey


**Abstract**: Nowadays mobility is facing challenges ranging from urban traffic to environmental pollution and noise. The advent of cyber-physical technologies such as automated driving, connectivity and powertrain electrification, alongside well-established innovations, might provide us with promising opportunities to face these challenges. Yet how to successfully combine such technologies in order to design and deploy economically-viable, socially-inclusive and environmentally-friendly mobility solutions is still unclear. In this context, this talk will show how we devised optimization models and methods to address research questions encompassing the individual-vehicle level and the transportation-system level. In particular, I will first present models and optimization algorithms to design and control fully-electric vehicles. Second, I will give an overview on our work on mobility systems, including models to study the societal benefits stemming from new mobility paradigms terms of sustainability, accessibility and equity, and fair incentive schemes to align the behavior of selfish users with the system optimum.


**Lecturer short bio**: *Mauro Salazar is an Assistant Professor in the Control Systems Technology section at Eindhoven University of Technology (TU/e) in the Netherlands, where he leads the MOVEMENT Research Group, with a co-affiliation at Eindhoven AI Systems Institute (EAISI). He received the PhD degree in Mechanical Engineering from ETH Zürich in collaboration with the Ferrari Formula 1 team in 2019, and then moved to Stanford University for his Postdoc until 2020. Mauro's research is focused on optimization models and methods for cyber-socio-technical systems and control, with applications on sustainable and human-centered mobility, pandemics, and material design. He was awarded the ETH Medal for his MSc and PhD theses, and his papers were recognized with the Best Student Paper award at the 2018 IEEE Intelligent Transportation Systems Conference and at the 2022 European Control Conference. In 2021, he received the Best Teacher Award in the Mechanical Engineering MSc, and, in 2022, he was nominated for TU/e's Young Researcher Award.*

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