



# Symposium on Systems Theory in Data and Optimization (SysDO)

University of Stuttgart, Germany, Sep 30 – Oct 2, 2024, [sysdo2024.de](https://sysdo2024.de)



University of Stuttgart  
Germany



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INTERNATIONAL FEDERATION  
OF AUTOMATIC CONTROL



## Stuttgart – where Science meets Industry

The Symposium on Systems Theory in Data and Optimization (SysDO) is organized by the Institute for Systems Theory and Automatic Control (IST) and will be held Monday through Wednesday, Sep 30 – Oct 2, 2024, at the University of Stuttgart, Germany. Stuttgart is not only the birthplace of the automobile and home to industrial heavyweights like Mercedes-Benz, Porsche and Bosch. It is also a vibrant center for research and industry in engineering, artificial intelligence and robotics with many key players. Stuttgart, also known as the metropolis between forests and vineyards, is a green and lively city, located in the Neckar valley, and becoming particularly picturesque during Indian summer.

## Technical Scope

Cyber-physical systems, such as intelligent transportation systems, smart grids, and advanced manufacturing solutions are becoming increasingly prevalent. Developing new methods to integrate measured data and different forms of feedback inside the decision-making mechanism is central for a trustworthy system design. There are distinctive challenges that arise in this scenario, such as the existence of different time-scales, the need to guarantee sufficient richness of the collected data, or the effect of suboptimal decisions under uncertainty.

SysDO aims to focus on these challenges by bringing together researchers working in **control, optimization, learning**, and in particular at the intersection of these topics. Lasting solutions require an interdisciplinary approach, and we therefore welcome both methodological works that propose new theory and algorithms, as well as cutting-edge applications.

**Topics of interest** include (but are not limited to)

- Data-driven control (direct and indirect)
- Uncertainty-aware sequential decision making
- Control theory for optimization algorithms
- Online learning for optimization and control
- Systems theory in learning

## Program

The goal of SysDO is to create a venue which fosters engaging discussions among the participants on the state of the art as well as future prospects of a range of topics connected with the themes of the symposium. The program is **single-track** and will include **plenary, poster** and **spotlight talk sessions**. Contributions of the following two forms will be considered, both of which will be peer-reviewed: **paper contributions**, which feature new research results and will be published in the official conference proceedings (to appear in Springer Lecture Notes in Control and Information Sciences Proceedings); and **extended abstracts**, which contain latest research findings or can be used to disseminate results from a recently submitted/accepted journal publication. Further, all SysDO participants are invited to a gala dinner which takes place on Oct 1 on the occasion of the 25th anniversary of the IST.

## Confirmed Plenary Speakers

Anuradha Annaswamy	(MIT)
Navid Azizan	(MIT)
Francesco Borrelli	(UC Berkeley)
Maryam Fazel	(U Washington)
Julien Hendrickx	(UC Louvain)
Daniel Kuhn	(EPFL)
Necmiye Ozay	(U Michigan)
René Vidal	(U Penn)
Melanie Zeilinger	(ETH Zurich)

## Important Dates

May 5, 2024	Initial submissions due
July 2024	Acceptance notification
Aug 2024	Final submissions due
Sep 30 – Oct 2, 2024	SysDO symposium

## Organizing Committee

<b>General Chair</b>	
Andrea Iannelli	(U Stuttgart)
<b>General Co-Chair</b>	
Frank Allgöwer	(U Stuttgart)
<b>Program Chair</b>	
Julian Berberich	(U Stuttgart)

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