

# ML-RT-Agenda 2025

## Towards a research agenda for learning-enabled safety-critical real-time systems



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# Why ML-RT-Agenda?



**Machine-learning and AI technologies are here to stay**  
(it will be present in the future of safety-critical systems)

Growing rapidly

Plenty of opportunities, but where to start?  
Where to go?

Our research efforts in this direction are still sparse



# Our goals

**(RT for ML)**

**How can our expertise help designing learning-enabled safety-critical systems?**



Safe

Performant

Certifiable

Trustable and explainable

Sustainable  
(energy efficient)

Scalable

Maintainable

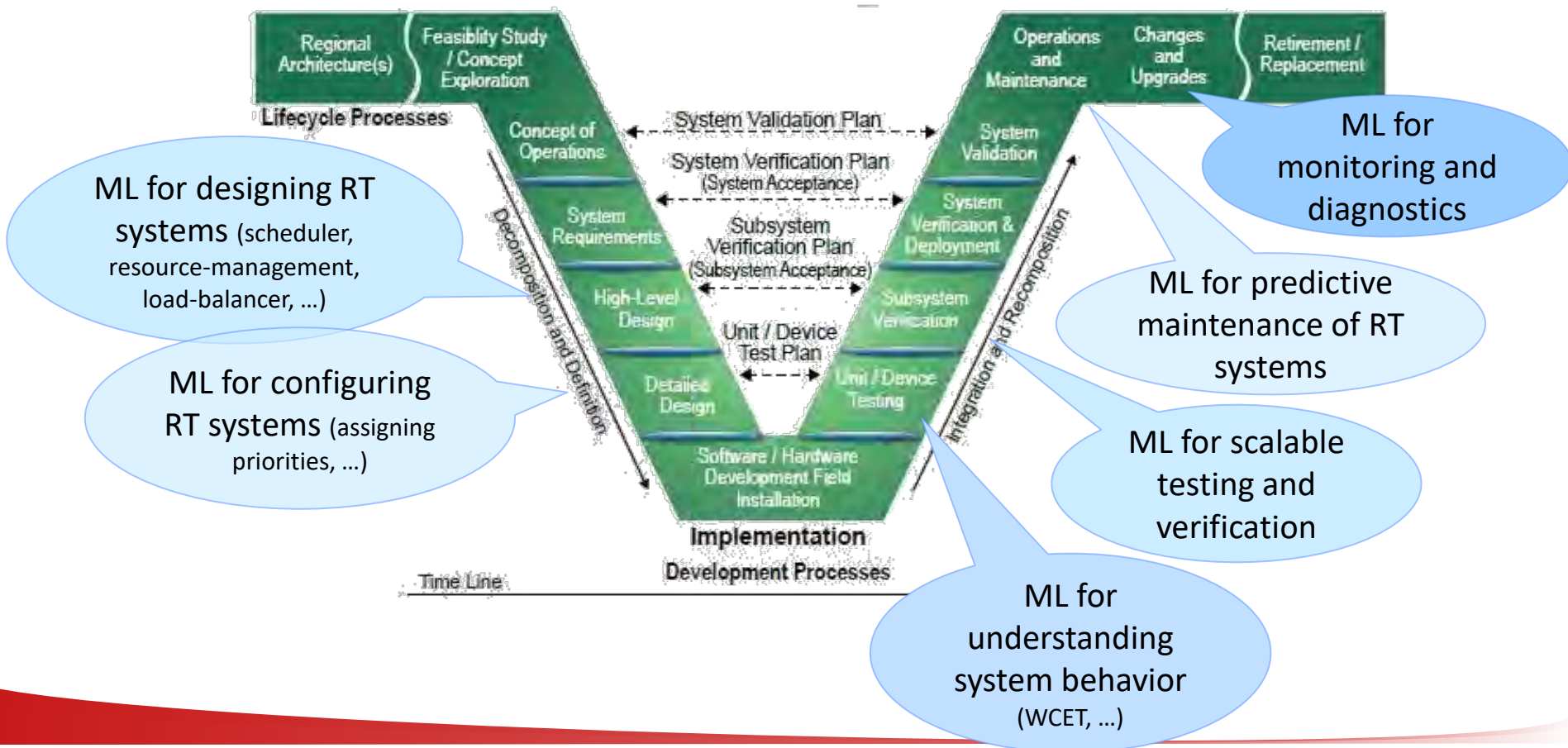
# Our goals

## (RT for ML)

How can our expertise help designing learning-enabled safety-critical systems?

## (ML for RT)

How can ML and AI technologies help us design better real-time systems?



# Our trajectory

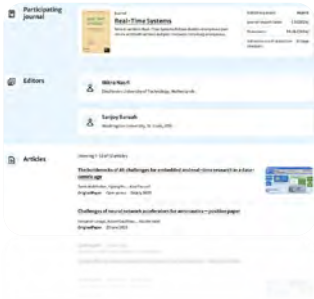
## ML-RT-Agenda 2024 (at ECRTS)



## WMC 2025 (at RTSS)



A special issue at the RTS Journal of Springer (perspectives of our speakers)



Submission of a Dagstuhl seminar

## ML-RT-Agenda 2025 (at ECRTS)

**NOW**

# Agenda: Today's keynotes

## Keynote: “Foundation Models for Edge AI”

Tarek Abdelzaher (University of Illinois, US)

13:35 – 14:40



## “Towards Efficient and Safe ML in Real-Time Cyber-Physical Systems”

Zhishan Guo (North Carolina State University, US)

14:45 – 15:00



## “On the Use of Machine-Learning for Runtime Monitoring”

Mitra Nasri (Eindhoven University of Technology, NL)

15:00 – 15:10



## Discussions, conclusions, and next steps

15:10 – ...