

# MLE DAYS'23

Machine Learning in Engineering Conference @ TUHH

The conference for the knowledge transfer in the field of machine learning for the engineering practice.

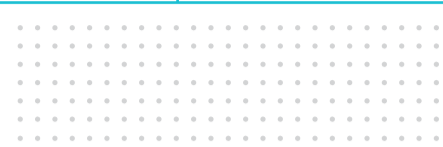
[Register now at mle-days.hamburg](https://mle-days.hamburg)

25th - 27th September 2023

## OVERVIEW



We invite you to join us in discovering the new applications of machine learning in engineering practice.



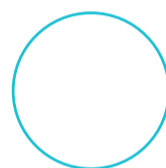
Machine learning has become a key driver of economic innovation and development. However, the application potential in engineering is comparatively little known and exploited.

This is why Hamburg University of Technology is hosting the **MLE Days 2023 conference from September 25 to 27.**

It will give participants a broad and well-founded insight into engineering and operational application fields of machine learning and artificial intelligence.



Over the three days, a program with a total of eighteen lecture sessions awaits you, highlighting different key topics from a scientific and practical perspective. The program will be framed by keynotes, networking sessions, a career event on Tuesday and an invitation to a long-term collaboration.



Registration & participation is free of charge.

## CONTENT & SPONSORSHIPS

The MLE Days offer two days of foundational and hands-on sessions, along with a dedicated day focused on startup and entrepreneurship in the field of Machine Learning Engineering.

### 2 Days of Foundational and Hands-On MLE

Join us for two days of foundational and hands-on machine learning engineering, covering topics ranging from Stochastic Gradient Descent to ML on resource-constrained microcontrollers. Immerse yourself in technical details and gain practical experience on Monday and Tuesday.

### 1 Day of Entrepreneurship and Start-Up Energy

Experience a day of entrepreneurship and start-up energy focused on AI and ML on Wednesday. Gain valuable insights from actual start-ups implementing AI and ML solutions and participate in challenges to enhance your skills.

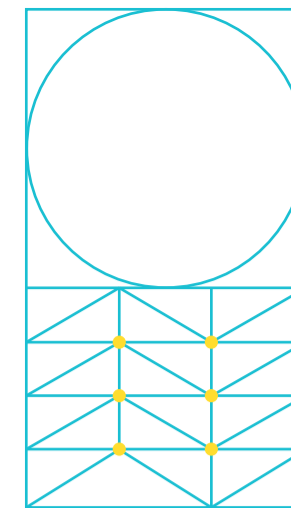
## CAREER EVENT

Your chance to speak to industry experts as well as ambitious startups from the ecosystem of AI.Hamburg.

**NXP THALES**  
**AIRBUS d-fine**

more to be announced...

## COOPERATIONS



[mle-days.hamburg](https://mle-days.hamburg)



## PROGRAM Monday 25.09.2023

- from 08:00 Registration & Networking
- 09:00 Opening, Greetings from the Organizing Committee MLE@TUHH
- Keynote** The human matters! Perspectives on a human-centered view of Machine Learning  
Prof. Pierre-Alexandre Murena (TUHH)
- 10:00 Coffee Break & Networking
- 10:30 **Session 1**  
**Algorithmic Foundations of AI**  
Prof. Matthias Mnich  
**Use Cases at DASHH**  
Dr. Christiane Ehart (DESY)  
**Application of Machine Learning in Electric Power Systems**  
Dr. Davood Babazadeh (TUHH)
- 12:00 Lunch & Networking
- 12:45 Elevator Pitches
- 13:30 **Session 2**  
**Introduction to the Stochastic Gradient Descent**  
Prof. Nihat Ay (TUHH)  
**Introduction to Artificial Neural Networks: Classifying Handwritten Numbers using Python and TensorFlow/ Keras - Part I**  
Prof. Robert Meißner (TUHH)  
**Application and Chances of Machine Learning Methods in the Electromagnetic Compatibility**  
Morten Schierholz (TUHH)
- 15:00 Coffee Break & Networking
- 15:30 **Session 3**  
**TorchPhysics - A deep learning library for solving differential equations**  
Tom Freudenberg, Janek Gödeke (Uni Bremen)  
**Introduction to Artificial Neural Networks: Classifying Handwritten Numbers using Python and TensorFlow/ Keras - Part II**  
Prof. Robert Meißner (TUHH)  
**Models of Cyber-Physical Systems and the Detection of Anomalies**  
Prof. Görschwin Fey, Swantje Plambeck, M. Sc., Gianluca Martino, M. Sc. (TUHH)
- 17:00 Closing & Get Together in the Foyer

## PROGRAM Tuesday 26.09.2023

- from 08:30 Start of Day 2 & Networking
- 09:00 **Hardware-aware Neural Architecture Search and NXP's Enabling Technology**  
Keynote  
Dr. Sebastian Vogel (NXP)
- 10:00 Coffee Break & Networking
- 10:30 **Session 4**  
**Implementation of Neural Networks on Resource-Constrained Microcontrollers for Sensor Applications Part I**  
Dr. Marcus Venzke (TUHH)  
**Machine Learning in Materials Science**  
Dr. Sam Hall (HZB), Dr. Tilmann Hickel (BAM), Dr. Tak Wong (HEREON)  
**Machine Learning for Radar Applications**  
Prof. Markus Gardill (BTU Cottbus)
- 12:00 Lunch & Networking
- 12:45 **Poster Session**
- 13:30 **Session 5**  
**Implementation of Neural Networks on Resource-Constrained Microcontrollers for Sensor Applications Part II**  
Dr. Marcus Venzke (TUHH)  
**Machine Learning Applications in Accelerator Operations**  
Prof. Annika Eichler (TUHH, DESY)  
**Efficient Uncertainty Quantification with Surrogate Models**  
Prof. Benedikt Kriegesmann (TUHH)
- 15:00 Coffee Break & Networking
- 15:30 **Session 6**  
**Machine Learning for Signal Processing**  
Dr. Franziska Albers (Mathworks)  
**Machine Learning in Maritime Logistics**  
Marvin Kastner (TUHH)  
**Machine Learning and Artificial Intelligence in Aviation**  
Prof. Ralf God, Prof. Benedikt Kriegesmann (TUHH)
- 17:00 **mAI-tAI-Mixer - meet AI & talk AI**  
Career Event with our Partners
- 19:00 End of Day 2

## PROGRAM Wednesday 27.09.2023

- from 08:30 Start of Day 3 & Networking
- 09:00 Opening from MLE and AI.STARTUP.HUB  
AI.HUB.Hamburg & MLE@TUHH
- 09:15 **Robotics & AI**  
Ecoterrabot: A robot that destroys weeds.  
Exagol: A robot that finds veins and draws blood.
- 10:00 **No Robotics & AI**  
Mindlink: Search for terms in texts  
Scandium: Damage to objects through evaluation of satellite images  
Shaanty: Treating depression and burnout through AI
- 10:45 Coffee Break & Networking
- 11:15 **Why founding is just awesome**  
Founders' report on the most emotional moments and reports from the Startup Port.
- 12:00 **How I build a startup**  
From a problem to an exponentially scalable product
- 12:45 Lunch & Networking
- 13:30 **Challenges**  
**The best AI model for my problem**  
tba  
**We disrupt Amazon and Otto**  
tba  
**With online marketing to the top**  
tba  
**Mega disruption with Generative AI**  
tba
- 15:00 **Pitch Jam: The wildest pitch event of the century**  
tba
- 16:30 **How do we want to change the world with AI**  
tba
- 17:00 Closing & Get Together in the Foyer

## ORGANIZATION

The "MLE-Days 2023" are organized by the research initiative "Machine Learning in Engineering (MLE@TUHH)", which bundles the competencies of our university in the field of machine learning and acts as a platform for exchange with practitioners.

**CHRISTOPH IHL**  
Institute of Entrepreneurship

**ROBERT MEIßNER**  
Institute of Polymers and Composites

**EDITOR**  
Jonas Wilinski & Jürgen Thiesen

**ORGANIZATION**  
MLE @ TUHH Team

2nd Edition, 08/2023

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