Artificial Intelligence in Industrial Applications

Deep Learning, Python and various topics related to Industry 4.0



Expect these Contents

This Summer School introduces the fundamentals of Cyber Physical Systems, Network Infrastructure, Innovative Sensor Systems and Data Integration to provide a comprehensive understanding of data acquisition in an industrial context, as well as a training in programming languages and tools commonly used for industrial AI, such as Python, scikit learn, and TensorFlow (Keras).

- Understand Key AI concepts such as machine learning, deep learning, reinforcement learning and time series processing
- Apply Supervised Learning in Predictive Quality
- Perform information integration in industrial networks
- Assess the potential of data driven solutions for industrial scenarios
- Master programming basics in Python

Quick Facts

Your Summer School at a glance

August 11 - 24, 2024 (2 weeks)	**Upon request**
On-campus	**Mentoring and Supporting Program**
RWTH Certificate with 3 ECTS (approx. 75 hours)	**Accommodation included**

Insights into the world of AI and smart manufacturing

Apart from understanding the theoretical concepts, you will also experience how they are put into practice. Learn how state-of-the-art AI-based technologies are used in the industry during one of our company visits!

RWTH International Academy gGmbH
www.academy.rwth-aachen.de/short-courses

INTERNATIONAL ACADEMY | RWTH AACHEN UNIVERSITY

Artifical Intelligence in Industrial Applications (SEU) - Summer School 2024 on campus

German Summer Time (UTC +2)

Week 1	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date	11 August	12 Augst	13 August	14 August	15 August	16 August	17 August
08:00-08:30	Collective arrival						Free time for excursions, sight-seeing and self-study
08:30-09:00							
09:00-09:30			Industry 4.0 + KDD Session 1	Python fundamentals and Jupyter Notebooks Programming Session 1	City Trip to Maastricht (The Netherlands)	Python: Data Visualization Programming Session 4	
09:30-10:00							
10:00-10:30		Pick up					
10:30-11:00		Welcome Orientation	Industrial Internet of Things Session 2	Data Types and Coding Guidelines in Python Programming Session 2		Python: Interactive Excercise Programming Session 5	
11:00-11:30							
11:30-12:00							
12:00-12:30		Lunch Break at Mensa Vita				Lunch Break at Mensa Vita	
12:30-13:00							
13:00-13:30							
13:30-14:00		Get to know Aachen City Rally	Hands-On: Data Mining Session 3	Group Work		Group Work	
14:00-14:30							
14:30-15:00							
15:00-15:30			WZL - Labtour	Python: Numpy und Pandas Programming Session 3		Theory Artificial Intelligence Session 4	
15:30-16:00							
16:00-16:30							
16:30-17:00							
17:00-17:30							
17:30-18:00							
18:00-18:30							
18:30-19:00							
19:00-19:30							
19:30-20:00							
20:00-20:30							
20:30-21:00							

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Week 2	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date	18 August	19 August	20 August	21 August	22 August	23 August	24 August
08:00-08:30	Free time for excursions, sight-seeing and self-study						Collective departure
08:30-09:00							
09:00-09:30		Supervised Learning 1 Session 5	Supervised Learning 2 Session 6	Unsupervised Learning Session 8	Group Work		
09:30-10:00							
10:00-10:30						Farewell Event	
10:30-11:00		Data Challenge 1: Predictive Quality		Data Challenge 2: Fault Detection	Preparation for Exam		
11:00-11:30							
11:30-12:00							
12:00-12:30		Lunch Break at Mensa Vita					
12:30-13:00							
13:00-13:30							
13:30-14:00		Group Work	Group Work	Deep Learning Session 9	Final Exam	Return of Cards	
14:00-14:30							
14:30-15:00							
15:00-15:30			Cloud and Big Data in Manufacturing Session 7 NMT	Data Challenge 3: Wear Monitoring			
15:30-16:00							
16:00-16:30							
16:30-17:00							
17:00-17:30							
17:30-18:00							
18:00-18:30				Barbeque			
18:30-19:00							
19:00-19:30							
19:30-20:00							
20:00-20:30							
20:30-21:00							