

E-AI Summer Workshop: Products and Services

July 7 – July 11 2025 – Agenda

Location: DWD Headquarters, Frankfurter Straße 135, 63067 Offenbach am Main, Germany

Times in CEST, Berlin.

Monday, July 7:

9:00 –	Registration
9:30 – 10:30	Interactive tutorial: AI for Weather and Climate (Roland Potthast, E-AI)
10:30 – 11:00	Coffee break
11:00 – 12:30	Interactive tutorial: AI for Weather and Climate (Roland Potthast, E-AI)
12:30 – 13:30	Lunch break
13:30 – 14:00	Natural Language Forecast Summaries (Simon Eaton, Met Office)
14:00 – 15:00	Getting started with MLOps: Collaboration and CI-automation (Marek Jacob, E-AI)
15:00 – 15:30	Coffee break
15:30 – 17:00	Getting started with MLOps: ... and Containers (Marek Jacob, E-AI; Marko Kvakić, DHZ)

Tuesday, July 8:

9:00	Welcome (Marek Jacob, Peter Braesicke, DWD)
9:15 – 10:00	E-AI survey & E-AI Strategic Evaluation (Roland Potthast, E-AI)
10:00 – 10:30	ML-PP status update (Katrin Ehlert)
10:30 – 11:00	Coffee break
11:00 – 12:00	Invited Talk (Charlotte Debus, KIT)
WG2 LLM (Johannes Schenk):	
12:00 – 12:30	Fuyu and cross attention lightweight multi-modal LLM for weather text product generation (Frank Guibert, MeteoFrance)
12:30 – 13:30	Lunch break
WG2 LLM (Johannes Schenk):	
13:30 – 14:00	DAWID – DWD's LLM-based AI assistant (Nikolas Porz, DWD)
14:00 – 14:15	The Role of LLM-Based Agents for Meteorological Services (Roland Potthast, DWD)
14:15 – 14:45	Brainstorming a joint E-AI LLM-based service/product for Weather and Climate (Breakout Groups)
14:45 – 15:15	Coffee break
15:15 – 15:30	Reports from breakout groups
15:30 – 15:45	Early Warnings for All (EW4All) initiative (Ario Saeid Vaghefi et al., WMO)
15:45 – 16:30	Destination Earth Data Lake – Background and Showcase (Miruna Stoicescu, EUMETSAT, Stephan Siemen, ECMWF)
16:30 – 17:30	Panel: Ethics Questions (Mark Liniger, Frank Guibert, Roland Potthast, Joel Bedard)
17:30	Icebreaker

Wednesday, July 9

WG1 Data Curation (Roope Tervo, Stephan Siemen, Arianna Valmassoi):

9:00 – 09:40 Data curation, Gap analysis and missing datasets (Roope Tervo, EUMETSAT; Stephan Siemen, ECMWF)

9:40 – 10:10 Zarr best practices (Carlos Horn, EUMETSAT)

10:10 – 10:30 New OPERA – SEVIRI dataset on common grid (Roope Tervo, EUMETSAT)

10:30 – 10:35 Group picture

10:35 – 11:00 Coffee break

11:00 – 11:30 CDR (climate data records) vs NRT (near real time) (Arianna Valmassoi, DWD)

11:30 – 12:10 Anemoi Datasets and beyond (Stephan Siemen, ECMWF)

12:10 – 12:30 Discussion (e.g. discussion where are you stuck? What did you try?) (Stephan Siemen, ECMWF; Arianna Valmassoi, DWD)

12:30 – 13:30 Lunch break

WG6 Nowcasting (Irene Schicker, Irene Livia Kruse)

13:30 – 14:15 Overview of AI nowcasting approaches for precipitation: from pysteps to deep learning (Gabriele Franch)
Retraining LDCast on Danish radar data (Ricardo Jara, DMI)
Retraining SHADECast on SARA3 solar radiation data (Iris Odak, CMHS)

14:15 – 15:00 Getting started with AI nowcasting on a supercomputer (Leonardo). A look at accessing radar data and implementing one AI nowcasting algorithm on the RadKlim radar dataset

15:00 – 15:30 Coffee break

15:30 – 16:00 Discussion: Shaping the MLCast community, software package and future contributions.

WG11 Regional Downscaling (Alexander Pasternack)

16:00 – 16:30 EUPPBench: A forecast dataset to benchmark statistical postprocessing methods (Cristina Primo, DWD)

16:30 – 17:00	Windgust Climatology Creating a Wind Gust Climatology for Germany Using a Neural-Network Based Approach (Kelly Stanley, DWD)	<i>16:30 – 17:30 Breakout of WG11:</i> coordination, expectations, goals, resources, etc. (Sebastian Lehner + 1)
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17:00 – 18:00 Discussion
Identifying common goals and projects

Thursday, July 10

WG3 Operations and Frameworks (Frank Guibert, Gabriela Aznar Siguan)

9:00 – 10:00 Frameworks for AI in meteorological services:

- mfai (Frank Guibert, Meteo France),
- FRAIM (Matthias Mages, Alexander Pasternack, DWD)
- Anemoi (Helen Theissen, ECMWF)

10:00 – 10:30 MLFlow best practices (summary May workshop) (Marek Jacob, E-AI; Gabriela Aznar Siguan, MeteoSwiss)

10:30 – 11:00 Coffee break

11:00 – 12:00	MLOps best practices and tech framework (Gabriela Aznar Siguan, MeteoSwiss; Frank Guibert, Meteo France)
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Observed Impact Collection

12:00 – 12:30	Towards Impact-based Forecast and Warning (IbFW) verification (Simon Eaton, Met Office)
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12:30 – 13:30	Lunch break
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Data Triage for operational weather forecasters (Susanne Theis)

13:30 – 14:00	How AI can assist in identifying valuable data within the vast amounts of model data available. (Steven Ramsdale, Met Office)
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14:00 – 14:30	Extraction of information for forecasters in convective-scale ensembles: bow echo detection and AI-based rainfall scenarios (Arnaud Mounier, Meteo France)
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14:30 – 15:00	Examples of machine learning enhanced forecasting/nowcasting tools at DWD: Front detection and storm severity estimate (Gergely Bölöni et al. DWD/FE22)
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15:00 – 15:30	Coffee break
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WG12 Quality Control

15:30 – 16:00	Using Machine Learning to Develop our Quality Control and Communicate its Results (Christian Sigg, MeteoSwiss)
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16:00 – 16:30	QC of air temperature data (Theresa Spohn, Met Eireann)
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16:30 – 17:00	QC of wet-bulb temperature (Kate Willett, Met Office, online)
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17:00 – 17:30	Defining common goals and Closing
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Friday, July 11 – Working Groups and Side Meetings

09:00 – 10:00	Monthly meeting of the E-AI Scientific Expert Team (by invitation, online)
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WG3 Operations and Frameworks (Frank Guibert, Gabriela Aznar Siguan)

09:00 – 10:00	mfai workshop (hands on introduction, code tour, ...) (open meeting)
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10:00 – 11:00	WG2 LLM (Johannes Schenk, (Frank Guibert)) Task Team on LLM Implementation and LLM Services (open meeting)
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