

MULTIMEDIA ARTIFICIAL INTELLIGENCE LAB (5 ECTS, S3 93001414):

Experimental methodology for developing and applying AI (Machine Learning, Deep Learning) to practical multimedia scenarios.

Multimodal data pre-processing, labelling, alignment, etc.

Accurate and stable model training, evaluation, ablation studies, interpretability and explainability.

Hands-on experience with various multimodal applications using practical tools and environments: libraries such as Scikit-Learn, Librosa, OpenCV, Keras, PyTorch, TorchAudio, TorchVision; AI communities such as Hugging Face, Kaggle, Discord; and AI coding assistants.

Introduction to multimodal AI services on cloud platforms: Google Cloud, AWS, Azure, Databricks, etc. Principles of MLOps for the lifecycle and deployment of multimedia machine learning models.

Adapting Multimodal Generative AI to specific applications and addressing ethical issues: fake content, hallucinations, toxicity, bias, etc. Project development (design, implementation and testing) (assessed via group work: 25–35%)