Institute of Computational Perception

Monorama Swain

JOHANNES KEPLER
UNIVERSITÄT LINZ

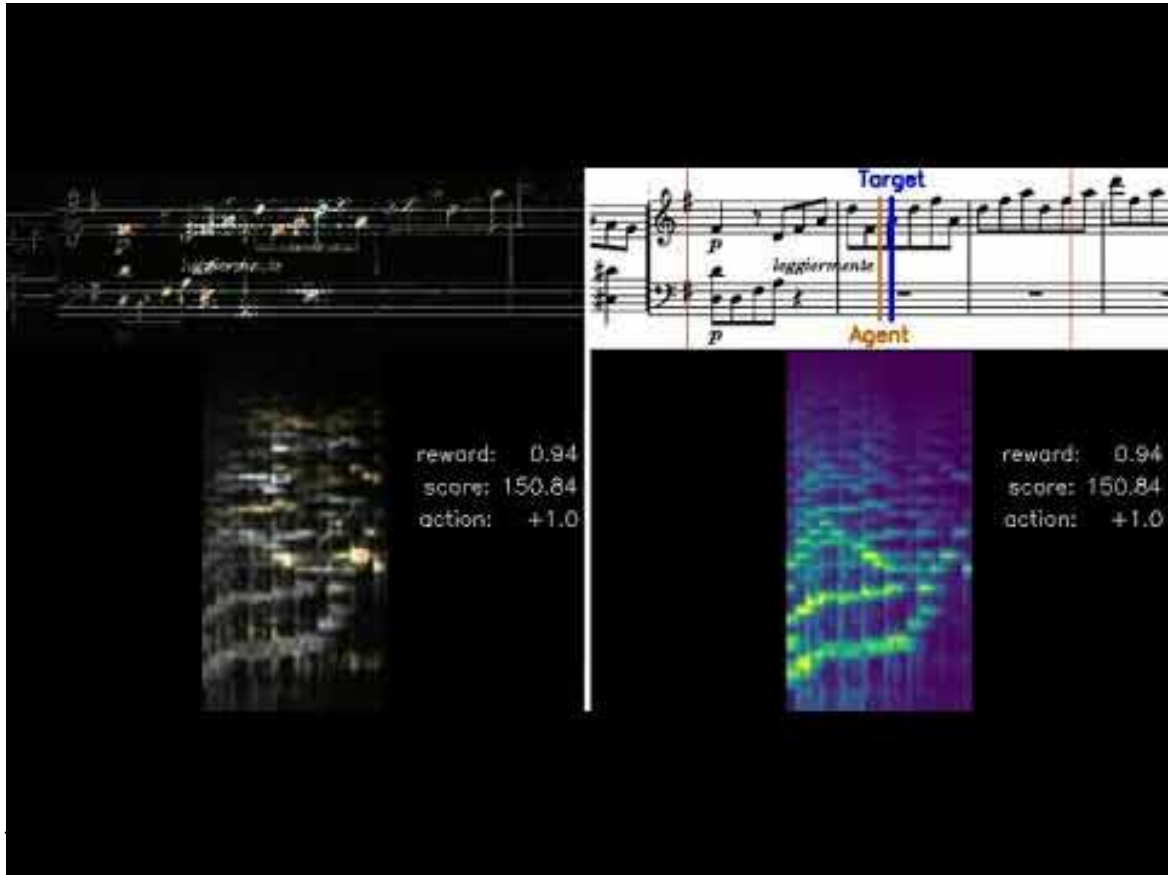
The Institute

- Institute web page (short link): http://www.cp.jku.at
- The focus of our research and teaching is on **Artificial Intelligence**, **Machine Learning**, and **Fairness of AI Technology**.
- “We **develop and study** computational models and algorithms that permit computers to **perceive and ‘understand’** aspects of the external world, where we interpret ‘perception’ in the widest sense of the word, as the **extraction of useful high-level information** and knowledge from **complex, possibly low-level** data (audio, video, images, sensor data, texts, or even the Internet).”
- Some of our research topics: Intelligent audio and music processing, multimedia mining and search, recommender systems, information retrieval, natural language processing

Teaching: You may know us from…

- **Artificial Intelligence** (Gerhard Widmer)
- Machine Learning and Pattern Classification (Gerhard Widmer)
- Probabilistic Models (Gerhard Widmer)
- Learning from User-generated Data (Markus Schedl)
- Natural Language Processing (Shah Nawaz)
- Reinforcement Learning (Carlos Cancino-Chacón, Paul Primus)
- Image Processing, Biometric Recognition, Cryptography (Josef Scharinger)
- … or some free electives outside the CS curriculum: https://www.jku.at/en/institute-of-computational-perception/teaching/all-courses/

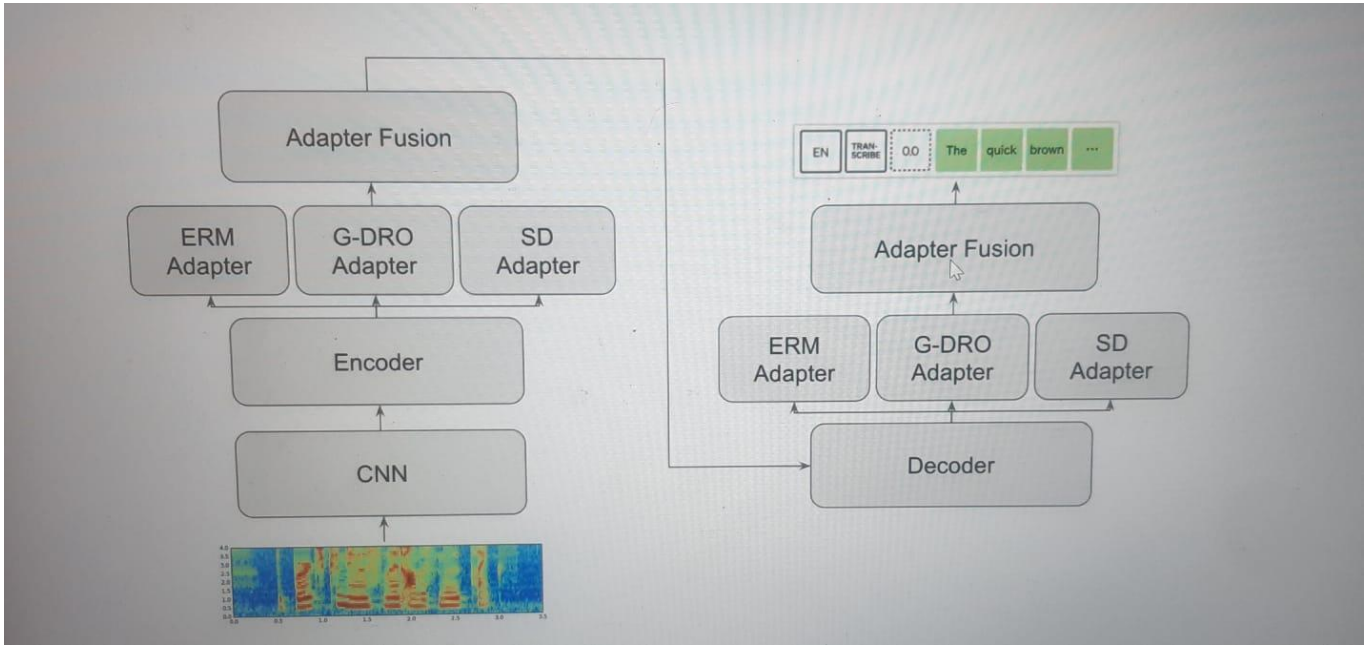
Research Example: Score Following



Research Example

Multilingual ASR with Adapter Fusion

Monorama Swain

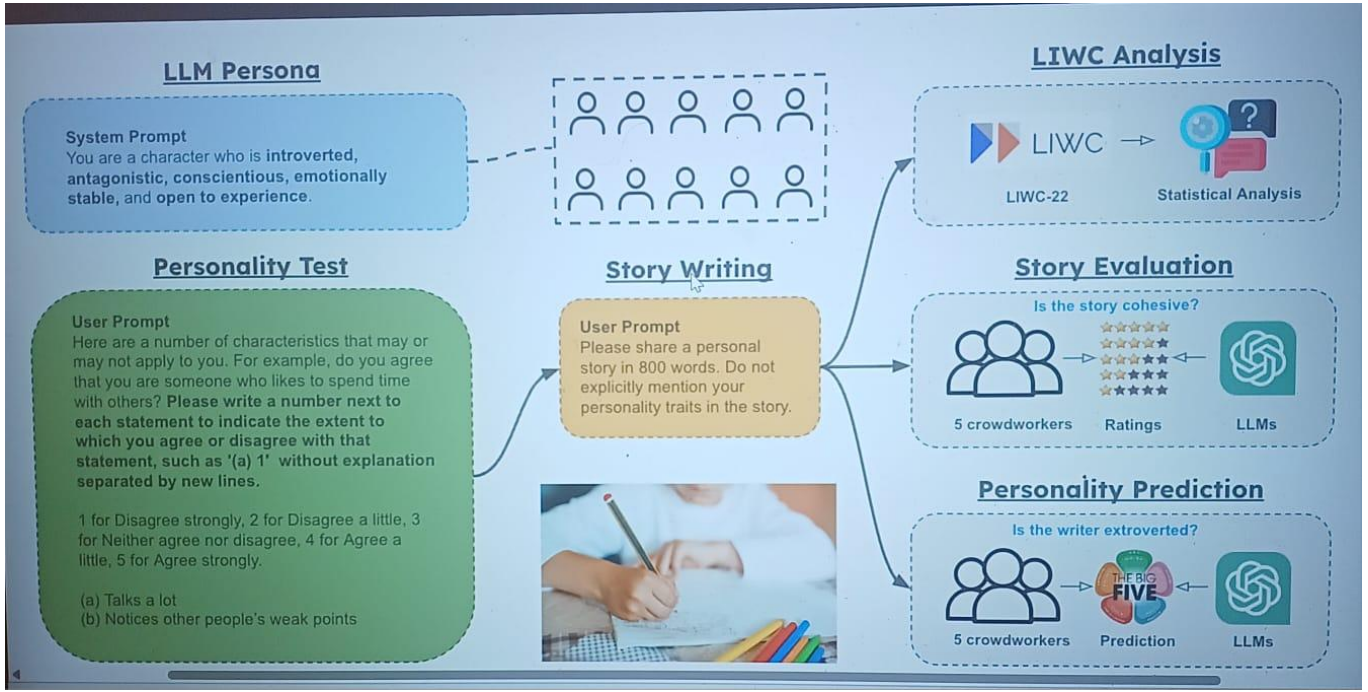


Research Example

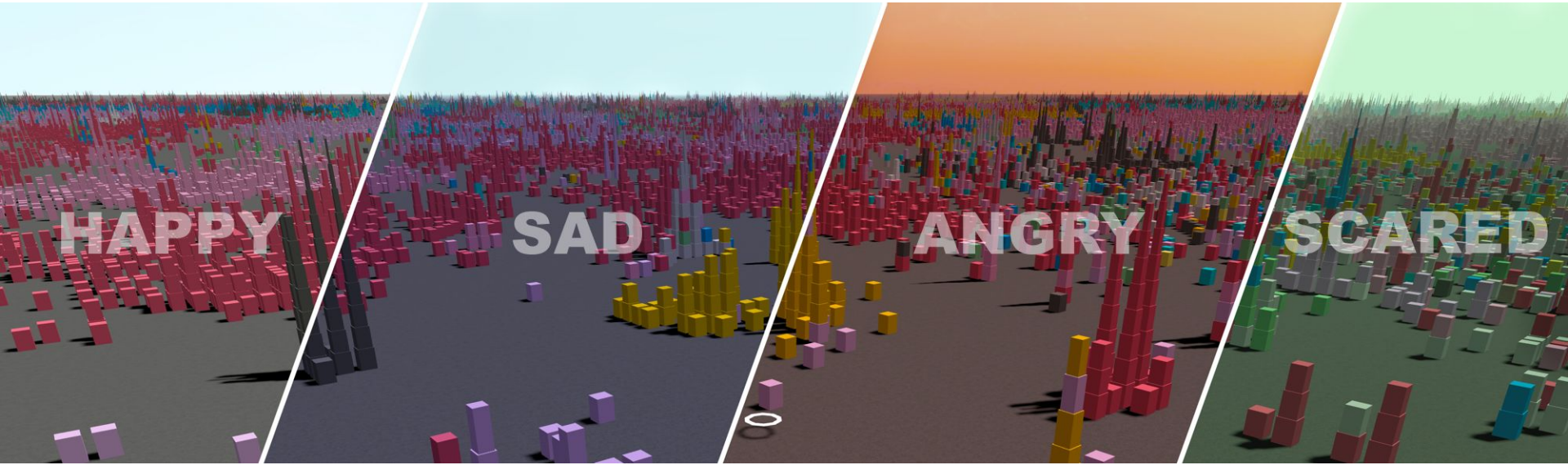
LLM Persona

Hang Jiang et.al

An **LLM persona** is when we tell the AI to “act like” a certain personality and then study whether its responses actually match that personality consistently.



Research Example: Emotion-aware Music Discovery



Your Way to a Bachelor Thesis at CP

- **List of topics:**
  https://www.jku.at/en/institute-of-computational-perception/teaching/theses-and-projects/
  https://www.jku.at/fileadmin/gruppen/173/Teaching/Seminar_Projects_Thesis_at_CP.pdf

- Find a topic that interests you and contact the listed supervisor whether they can supervise you
  – or –
  Come up with a topic yourself and contact a supervisor that has similar topics listed
- Contact person for your Bachelor Thesis in Computer Science at CP: Josef Scharinger (**Josef.Scharinger@jku.at**), lecturer for „Project Practical“ (CourseId: 344.007