

Institute of Computational Perception



JKU
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...

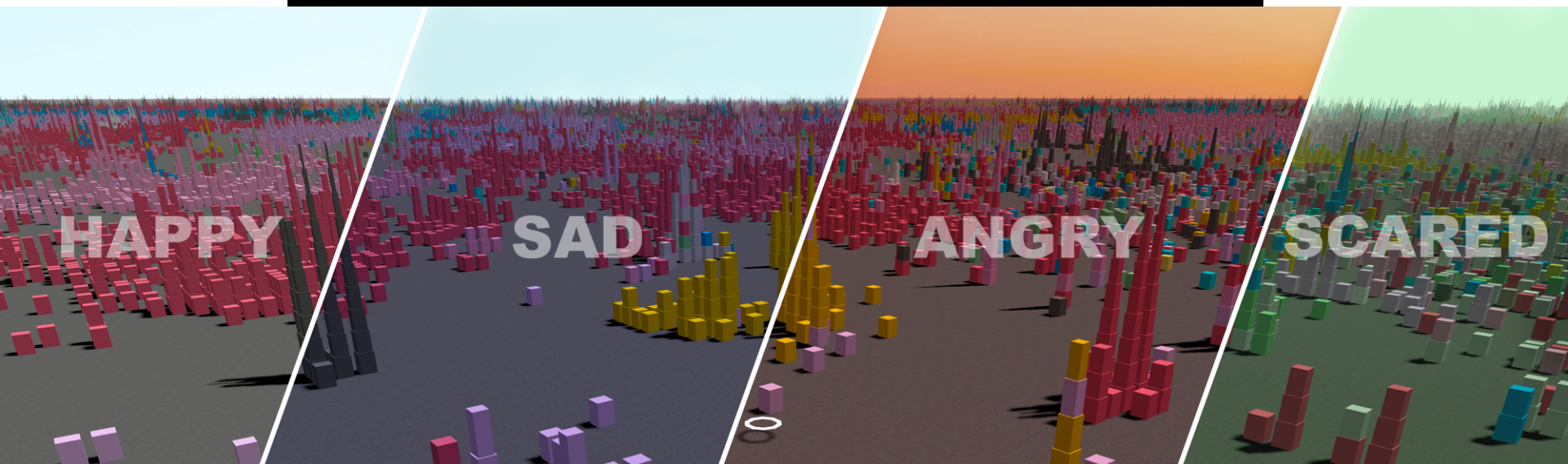
- Machine Learning and Pattern Classification (Gerhard Widmer)
- Probabilistic Models (Gerhard Widmer)
- Learning from User-generated Data (Markus Schedl)
- Natural Language Processing (Oleg Lesota)
- Reinforcement Learning (Peter/Primus/Cancino-Chacón)
- ... or some free electives outside the AI Master curriculum:

<https://www.jku.at/en/institute-of-computational-perception/teaching/all-courses/>

Research Example: Automatic Accompaniment



Research Example: Emotion-aware Music Discovery



Seminar, Practical Work & Thesis at CP

- **Seminar in AI:** Learn how to search, review and present literature on a previously unknown topic
- **Practical Work in AI:** Implement, run and document a baseline machine learning experiment
- **Bachelor's Thesis:** Design and execute a machine learning experiment to test a hypothesis, present results in context of prior work from literature

- The seminar is independent
- The thesis *usually* builds on the practical work
- You are welcome to do your seminar elsewhere and join us for the practical work and thesis, or vice versa!

Seminar in AI at CP

- **Seminar in AI:** Learn how to search, review and present literature on a previously unknown topic
- **Coordinator(s):** Carlos Cancino-Chacón, Silvan Peter
- **Supervisors:** Depends on the topic
- **Tasks:**
 - Choose a topic that you are curious to learn more about
 - Find 7–10 high-quality articles
 - Produce an annotated literature list (~2 pages)
 - Write a seminar paper (6–12 pages)
 - Present in class
- **Topic areas:** Music Processing, Audio Processing, Recommender Systems, Affective Computing
- **We do not have a deadline!** Come to the first session of the seminar in March

Practical Work in AI at CP

- **Practical Work in AI:** Implement, run and document a machine learning experiment
- **Coordinators:** Markus Schedl (course offered during the winter semester)
- **Supervisors:** depends on the topic / get in touch with “contact” mentioned on web page (below)
- **Topics:** wide selection listed on (currently not up-to-date!)
<https://www.jku.at/en/institute-of-computational-perception/teaching/theses-and-projects/>
- Contact us directly to do your practical work and/or thesis with us!

Questions

- If you have questions regarding seminar, practical work or Bachelor's Thesis, you can write me an email:
- carlos_eduardo.cancino_chacon@jku.at