INVITATION TO WRITE YOUR BACHELOR THESIS AT CP

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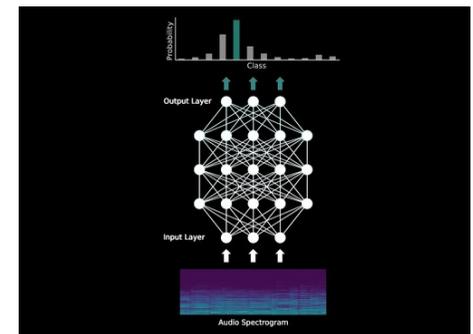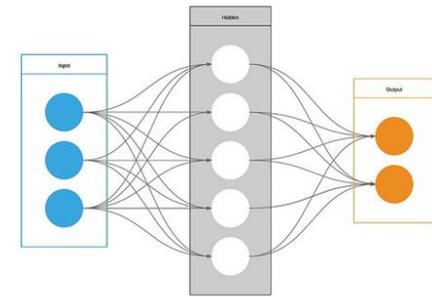
Institute of Computational Perception (CP)

GENERAL INFORMATION

- ■ Institute of Computational Perception at JKU
  - ☐ Head: Prof. Widmer (Wittgenstein Prize, 2 x ERC Advanced Grant)
  - ☐ Focus: AI, multimedia mining and recommendation, signal processing
- ■ We offer several ways to find a suitable bachelor thesis topic
  - ☐ Either: take a look at the list of theses and projects available at CP
    - ● I will present the major thematic areas that we offer in a moment
  - ☐ Or: if one of our lecturers has inspired you for a certain thematic area with his course, then just contact this lecturer and see if this interest can be developed towards a suitable bachelor thesis topic

THEMATIC AREAS AT CP (1)

- **Machine Learning and AI:** Much of our research applies Machine Learning and AI, but we are also interested in developing, improving or understanding Learning in general
  - ☐ Interpretable machine learning
  - ☐ Generative models (e.g. for audio)

- **Intelligent Audio Processing:** Our institute is heavily involved in research on Intelligent Audio Processing (apply machine learning to audio data)
  - ☐ Work in different learning scenarios
  - ☐ Sound event detection & classification
  - ☐ Anomalous sound detection

- **Intelligent Music Processing:** As one of the leading research labs in the fields of Music Computing we offer diverse topics related to AI & Music
  - ☐ Real-time score following & accompaniment
  - ☐ Instrument detection / music tagging

THEMATIC AREAS AT CP (2)

- **Multimedia Data Mining:** Mining of large-scale datasets that include multimedia content and user-generated data is an active area of research
  - Semantic analysis of text, music, video & metadata
  - Analyzing and mining online social networks

- **Multimedia Recommender Systems:** We offer topics on user modeling (personality, mood, cognition, or culture) and recommender systems
  - User-aware & context-aware recommender systems
  - How to increase transparency of recommendations

- **Natural Language Processing (NLP):** We offer many topics on deep learning models in NLP
  - Green NLP (resource efficiency of NLP models)
  - NLP in various applications and domains

- And maybe also take a look at: Digital Image Processing, Biometric Identification, Cryptography

TO SUM UP: IMPORTANT INFORMATION AT A GLANCE

- Theses and Projects at CP: https://www.jku.at/en/institute-of-computational-perception/teaching/theses-and-projects/

- Lecturers at CP: https://www.jku.at/en/institute-of-computational-perception/about-us/people/

- Contact person for your Bachelor Thesis in Computer Science at CP: Josef Scharinger (Josef.Scharinger@jku.at), lecturer for „Project Practical" (CourseId: 344.007)