HOW TO COMPLETE YOUR BACHELOR AT CP

Josef Scharinger

Institute of Computational Perception (CP)

GENERAL INFORMATION

- **Institute of Computational Perception at JKU**
  - ☐ Head: Prof. Widmer (Wittgenstein Prize, 2 x ERC Advanced Grants)
  - ☐ Focus: Artificial intelligence, machine learning, signal processing
- **We offer two ways to find a suitable topic (and advisor)**
  - ☐ 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
  - ☐ If you have already attended an interesting course at CP and want to deepen your knowledge in that area, then just contact this CP lecturer and develop a suitable thesis topic with this lecturer
    - ● I will also present our lecturers and their competences

THEMATIC AREAS AT CP (1)

- Machine Learning and Artificial Intelligence: Much of our research applies Machine Learning and AI, but we are also interested in developing, improving or understanding Deep Learning or Statistical Learning/Modeling in general

- Intelligent Audio Processing: Our institute is heavily involved in research on Intelligent Audio Processing, so we offer a variety of projects involving audio data and machine learning, and many different learning scenarios (semi-supervised learning, transfer learning, learning with weak labels, learning interpretable models)

- Intelligent Music Processing: As one of the leading research labs in the fields of Sound and Music Computing and Music Information Retrieval, we offer diverse topics related to AI & Music

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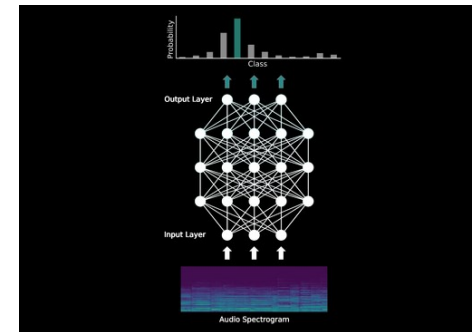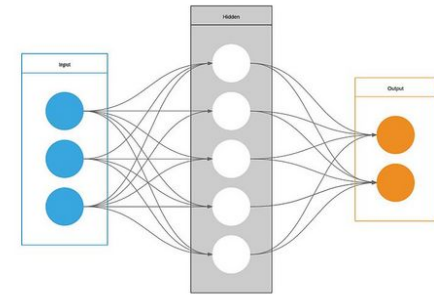
THEMATIC AREAS AT CP (2)

■ Multimedia Data Mining: Analyzing and mining of large-scale datasets including multimedia content and user-generated data is a highly active research area, often positioned at the intersection between computer science and social sciences.

■ Multimedia Recommender Systems: We offer topics on all aspects of user modeling and recommender systems. Our focus is on psychologically and sociologically inspired user models.

■ Natural Language Processing (NLP): We offer topics on deep learning models in NLP, various aspects of DL models such as bias and energy efficiency, and end-user NLP applications.

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

PEOPLE & COMPETENCES AT CP (1)

- Gerhard Widmer: Artificial Intelligence (AI), Machine Learning and Pattern Classification, Probabilistic Models

- Markus Schedl: Learning from User-generated Data, Multimedia Data Mining, Multimedia Search and Retrieval, Social Media Mining

- Josef Scharinger: Cryptography, Biometric ID, Image Processing

- Verena Praher, Katharina Prinz: AI (with a focus on explainable AI)

- Navid Rekab-Saz: Natural Language Processing (focus on Deep Learning)

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PEOPLE & COMPETENCES AT CP (2)

- Jan Schlüter: Machine Learning and Pattern Classification, Audio and Music Processing, Artificial Intelligence, Probabilistic Models

- Rainer Kelz: Audio and Music Processing, Artificial Intelligence

- Paul Primus: Machine Learning and Audio, Probabilistic Models

- Silvan David Peter, Carlos Eduardo Cancino-Chacon: Symbolic Music Processing

- Emilia Parada-Cabaleiro: Affective Computing

- Oleg Lesota: Learning from User-generated Data

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 completing your Bachelor in Informatik at CP: Josef Scharinger (Josef.Scharinger@jku.at), lecturer for „Project Practical" (CourseId: 344.007)