UNIVERSITÄT PASSAU
Fakultät für Informatik und Mathematik

Lehrstuhl für
Complex & Intelligent Systems

Bachelor-/Masterarbeit

Theme:

Deep Recurrent Neural Networks for Robust Speech Recognition

Speech recognition technology is increasingly coming into practical use, enabling a wide spectrum of innovative and exciting voice-driven applications that are radically changing our way of accessing digital services and information. Most of today's applications still require a microphone located near the talker. However, almost all of these applications would benefit from distant-talking speech capturing, where talkers are able to speak at some distance from the microphones without the encumbrance of handheld or body-worn equipment. For example, applications such as meeting speech recognition, speech-to-speech translation in teleconferencing, and hands-free interfaces for controlling consumer-products, like interactive TV, will greatly benefit from distant-talking operation.

The major problem in **distant-talking speech recognition** is the corruption of speech signals by both interfering sounds and reverberation caused by the large speaker-to-microphone distance. Therefore, the goal of this program is to utmost reduce the impact of interfering noise and reverberation on the target speech by the state-of-the-art machine learning algorithms of Deep Recurrent Neural Networks. By these efforts, machines could become more intelligent and understand us more easily in rooms.

Requirements:

- Preliminary knowledge in Machine Learning
- Good programming skill in Linux
- Some experience with C/C++ is required

Contact:

Dr.-Ing Zixing Zhang
zixing.zhang@uni-passau.de

If you are interested, please do not hesitate to contact me. Let's do such a meaningful and interesting research together!