

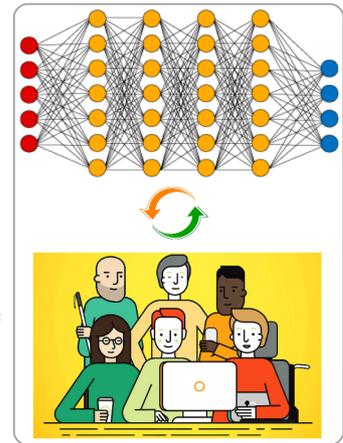
“Deep Learning for Human Computer Interaction”

Prof. Dr. Steffen Staab
Dr. Decky Aspandi

First Meeting: Feb 11, 16.00hrs
WebEx: <https://tinyurl.com/y4zuzpt8>

Target Group.

This seminar targets students interested in applying Artificial Intelligence and Machine Learning, especially Deep Learning, to improving Human-Computer Interaction.



The Topic

Deep Learning is a Machine Learning Technique that is particularly suitable for dealing with complex, weakly or unstructured data, which naturally arises in the interaction between humans and computers. Example applications include Google Translate, Facial Recognition by Facebook or Shopping data Analysis by Amazon, to name but a few.

Deep Learning at its core relies on the shared feature representations that are incrementally optimized using several learning mechanisms. These features are then mapped into high level vectors, conditioned to the desired target tasks. These automatically acquired representations allow for more flexibility in the learning process, thus can be adapted to any type and scale well to large amounts of data. Even though Deep Learning has been proven to work well on a range of tasks, such as Machine Vision, improving Human-Computer Interaction using such cognitive abilities is still in its infancy. Furthermore, current lack of clear understanding of its inner workings can also induce lack of trust of the user, especially in production settings.

In this English speaking seminar (presentations and seminar reports will have to be delivered in English) we will survey current approaches that apply deep learning to Human-Computer Interaction, such as User Case Studies and Affective Computing. Furthermore, we also explore current attempts to reduce corresponding lack of interpretability in the real life application domains, with the use of Network Distillations and Knowledge Graphs, for instance.

Procedure

Students will give presentations in the weekly seminar. 3 weeks before the seminar presentation, the structure of their presentations will be discussed with the lecturers. After the presentations and before the end of the summer term, the seminar reports must be handed in.