

Deep neural networks (DNN) represent the highest form of artificial intelligence. They are used to technically replicate the brain's ability to form, and train, neural networks to control certain functions. DNN hearing systems have been optimised with 12 million training sessions to highlight any unknown human voices from 360 so that they are transmitted in a natural balance to the ambient noise (Andersen, A.H. et al. (2021)). This means that test subjects can experience better speech understanding in noise, less listening effort, and increased memory (Santurette, S. et al. (2020)). In a new training cycle, a DNN has been trained to incorporate the head and body movements used in typical listening situations (Drgas, S. et al. (2023)). Sensors can detect whether in a group one is listening to one or more speakers, and whether people are orienting themselves in space. The environment and communication behaviour are analysed acoustically in order to recognise the user's individual listening preference, and to adapt the signal processing accordingly.