



Abschlussvortrag Masterarbeit Ankti Sharma

„Deep Learning Approach to Identify Locations From Speakers Emitting the Same Ultrasound Signal in an Indoor Positioning System“

The thesis explores the accuracy of deep learning methods for an ultrasound based Indoor Positioning System developed by the DEJ Technology GmbH which is also known as Koopango IPS. The research focuses on the answers to the question: How deep learning techniques can improve accuracy in predicting location coordinates in an indoor environment using ultrasound based Fingerprinting Indoor Positioning System? This paper provides an in-depth functionality of the Koopango IPS, an overview of how data is collected and processed exploiting the concepts of audio processing, and examines deep learning methods to improve accuracy of IPS for localization of (x,y) coordinates in an indoor space using a Design Science research methodology. Two comprehensive data-sets consists of audio signal recordings with corresponding location coordinates in two distinct indoor environments are used. The first data-set is used for training and evaluation of the model, whereas the second data-set evaluates the behaviour of the same model in a different environment.

Betreuer der Arbeit: Prof. Dr. Benjamin Leiding, Prof. Dr. Benjamin Säfken (Institut für Mathematik)

Datum: Montag, 21. August 2023, 10:00 Uhr

Ort: Online-Meeting über BBB

Link: <https://webconf.tu-clausthal.de/b/ben-yjv-0uq-l3z>