



ISM Lunchtime Seminar Series

The ISM Lunchtime Seminars are online monthly events, which take place on Thursdays, 13:00-13:30h, and are open to all interested colleagues and students. ISM researchers and guest speakers present their work during a **15 min** seminar, in the English language, followed by a brief Q&A session.

We are happy to announce our next speaker: Vishnu Prathapan, a PhD student from the research group of Prof. Dr. Oliver Schmitt.

Title: Predicting multiple sclerosis progression with biological neural network models.

Abstract:

A new approach has been put forth to overcome the limitations that prevail in the existing methods for predicting the disease progression of Multiple Sclerosis (MS). In MS, the disruption of myelin sheaths, which act as electrical insulators along nerve fibers, hinders efficient neuronal signal transmission. The objective is to analyse the dynamic changes that arise in different regions when a disturbance is initiated in the network thus providing a deeper understanding of MS disease progression. The approach involves constructing such a network by utilizing the conduction properties of the established Hodgkin-Huxley (HH) neuron models to imitate the demyelination and re-myelination of MS conditions and analyse the signal network pattern. The model is initially validated for different lengths, conduction values, and connection weights through three nodal connections. Later, these individual factors are incorporated into a small network and simulated to mimic the condition of MS. The signal propagation pattern varies as expected by adapting to the input conditions. This approach has opened up a new path to explore the progression of the disease in MS. The work is in its preliminary state, but with a future vision to apply this method in a connectome, providing a better clinical tool.

When: 16th May 2024 at 13:00h

Where: MS-Teams (to join, please click [here](#))

Please follow the rules below to make these seminars a success:

- Please use your real name while entering the meeting. Participants with cryptic names will not be given access to the seminar.
- Please turn off your microphone while the seminar is taking place.
- Please feel free to ask questions!

Contact information: Please contact [Dr. Annakarina Mundorf](#) or [Dr. Deeksha Malhan](#) for further information.