

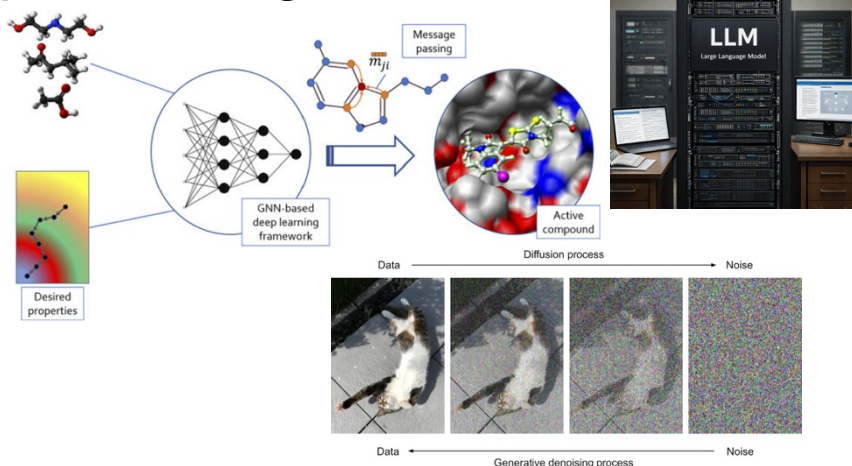


## Forschungspraktikum Summer Semester 2025-26

### “Deep Learning Lab”

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M.Sc. Lluís Pastor  
M.Sc. Arvinth Arun

First Meeting: To be defined  
Further Meetings: To be defined



#### Target Group

This lab targets students interested in the application of the advances in Deep Learning. Prior knowledge in machine learning is mandatory. Prior coding experience is also mandatory. Students should bring their personal laptop in the lectures. GPU resources are not necessary.

#### The Topic

The goal of this lab is to teach the best practices to solve popular problems in the field of Machine Learning. Particularly, students will be able to learn about Large Language Models, Graph Learning or Generative Models. We provide various real-world examples with sufficient training data, so that the students can gain hands-on practice. Participants will select one of the provided topics, and build the prediction models using deep learning libraries (e.g. Pytorch, Diffusers). We also offer a selected bibliography to help students begin their research effectively.

Students are expected to work in groups and learn the fundamental steps in developing Machine Learning algorithms for each session. This includes learning to choose from a wide range of different architectures, training setups, and optimization procedures.

By the end of the course, students will prepare a scientific report and present their projects to the class. They will also participate in a Q&A session following their presentation, helping them prepare for future work such as a master's thesis.

#### Procedure

During the initial classes, we present the different topic options and form teams. Participants provide weekly progress updates to their supervisors. At the end of the Lab, students deliver final presentations. Reports must be submitted before these presentations and before the end of the summer term.

#### Contact

If you have any questions regarding the lab, please feel free to contact us via email:  
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