Applied Machine Learning
Preliminary Meeting (IN2106, IN4192)

Lecturer: Prof. Dr. Stephan Günnemann

Winter Term 23/24

Team

- Prof. Dr. Stephan Günnemann

- Nicholas Gao, Marten Lienen, Tom Wollschläger

This is a practical course (Praktikum) for **Master**'s students!
Name of module: Applied Machine Learning (IN2106, IN4192)

Website: `www.cs.cit.tum.de/daml/lehre/wintersemester-2023-24/applied-machine-learning/`

Data Analytics
and Machine Learning

Why attend our ML lab course?

1. Opportunity to **implement and apply** state-of-the-art ML algorithms

2. Gain **hands-on experience** working on **real-world data**, solving **real-world tasks** by working on projects offered by our **industry partners** as well as **academic projects**

3. Work on **large-scale problems** with the support of our **GPU computing resources**

Requirements

- Requirements for the lab course

  - **Advanced programming skills**: Python, PyTorch, etc.

  - Strong foundations in data mining/machine learning

  - You should have passed relevant courses (the more, the better)
    $\rightarrow$ Machine Learning,
    $\rightarrow$ Machine Learning for Graphs and Sequential Data,
    $\rightarrow$ . . .
    $\rightarrow$ see the application form

  - Motivation

- Additional selection criteria

  - Other **relevant** experience (projects in companies, experience as a HiWi)

  - You can send an overview of your experience to us (see end of slides)

Organization – Structure

- Groups of 3 students

- We offer 4 different projects

- Students get access to our GPU servers, each with
  - 4x NVIDIA GPU with 11GB RAM
  - 10-core CPU
  - 256 GB RAM
    - $\rightarrow$ Scale up your models and data!

- Bi-weekly course meetings (around 2 hours)
  - in person
  - Thursdays 10-12
  - All groups present their work
  - Each group should briefly report their progress and next steps

- Bi-weekly group meetings
  - with advisor and industry partner
  - analyze results, plan next steps

- Regular documentation of your work on wiki

- Code on git (gitlab.lrz.de)

TUM-DAML

Molecular Charges   **Fluid Dynamics**

Ippen Digital   ENLYZE

Optimizing Recommender Systems   **Anomaly Detection in Machine Data**

Veridos

Generative Models for Identify Verification

Registration via the matching system!
`https://matching.in.tum.de`

Applied Machine Learning (IN2106, IN4192)

+ Fill out the application form!
`https://forms.gle/1qx8G6UoVChyqPmK6`

Deadline 19.07.2023

- Which lab / seminar are you applying for?
- List of ML-related lectures you have attended
- A **concise** overview of your resume (bullet list, not a complete CV)
- Any additional relevant experience (research, HiWi positions etc.)