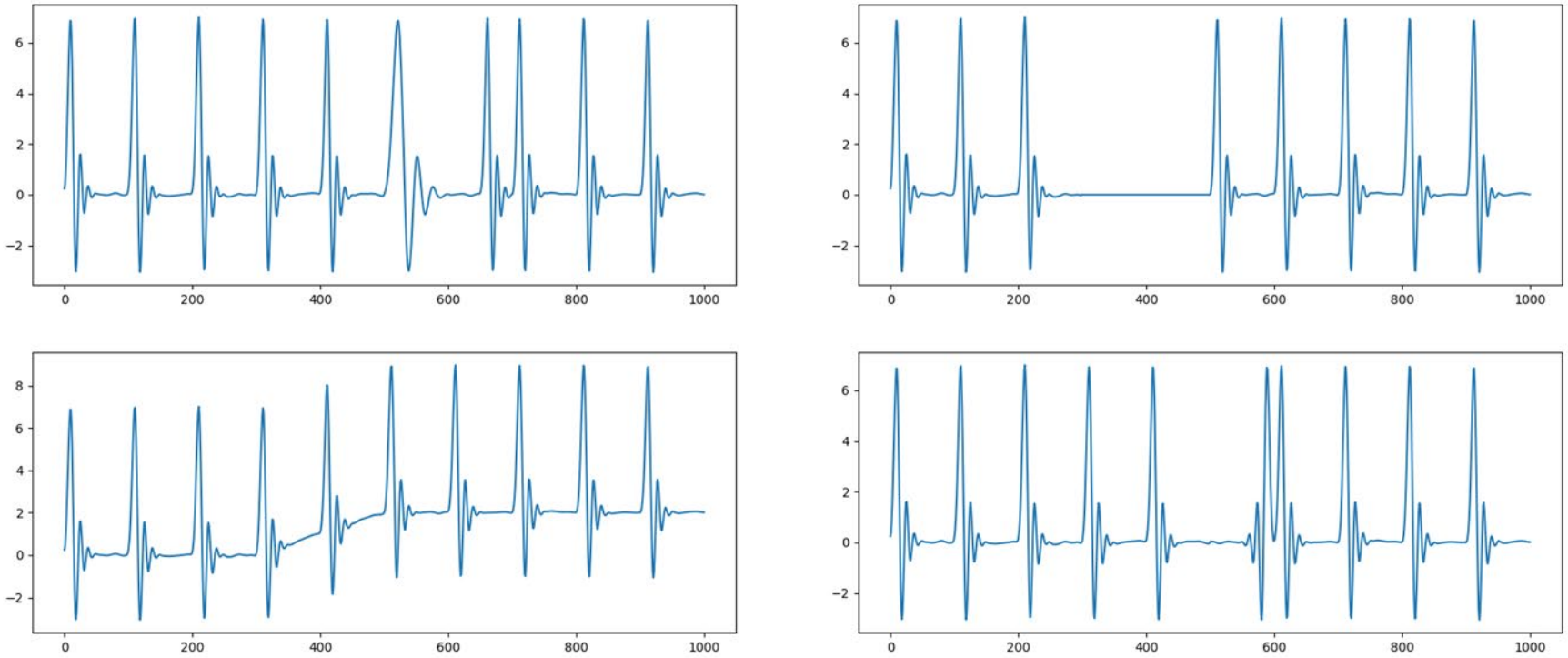
Seminar: Modern Approaches to Anomaly Detection

(M.Sc. Computer Science, M.Sc. Data Science)

By Prof. Dr. Emmanuel Müller, Shubham Gupta, Tim Katzke

Seminar Main Topic

- The objective of anomaly detection is to identify patterns in data that significantly deviate from what is considered as normal behavior



Seminar Sub-topics

- This seminar covers diverse aspects of state-of-the-art anomaly detection approaches, with each student focusing on a particular sub-topic

- Sub-topics will for example address the following:
  - Trustworthiness aspects (interpretability, robustness, etc.)
  - Application domains (predictive maintenance, quality control, etc.)
  - Complex data structures (time series, graphs etc.)
  - Dynamically evolving data (drift detection, dynamic model updates, etc.)

Organization

- Format:
  - Assignment of sub-topic and supervisor based on indicated preferences
  - Preparation of an individual report and presentation on specific sub-topic
  - Report submission and presentations (as block seminar) near the end of the semester

- Registration:
  - Central allocation by the Faculty of Statistics
  - Expected number of participants: 12 (CS + DS), 6 available slots for M.Sc. Data Science
  - Prior knowledge of machine learning is expected (i.e., successful completion of BDA)
  - Questions: tim.katzke@tu-dortmund.de