Task 10: Multilayer anomaly detection
Design of anomaly detection algorithms

Challenges

- *Uncertainty assessment*

    Bayesian handling of anomalies — divergence between distributions.

- *Missing values*

    Missing values accompany both adversarial and oblivious anomalies.

- *Large groups of related time series*

    Large groups of related time series should be <u>reconciled</u> for more accurate predictions.

Research directions

- Bayesian deep time series models
  - robust training and forecasting with uncertainty
  - handling of missing values
  - novelty detection via divergence between probabilistic forecasts

- Time series reconciliation
  - Bayesian reconciliation of forecasts
  - Efficient distributed implementation

Activities in progress

1. Bayesian deep time series architectures
   - review of related work – commenced
   - baselines evaluation and comparison — pending data
1. Time series reconciliation
   - review of related work – in progress
   - baseline evaluation and comparison — pending data and 1.
1. Data collection for evaluation — commenced