

In the field of power distribution and electrical grid

### Work title:

“Sensitivity Analysis of Housing Demand Forecasting: Evaluating Model Robustness Across Varying Housing Quantities”

### Background:

Accurate forecasting of housing demand is important for effective urban planning and resource allocation. This thesis conducts a sensitivity analysis to verify the accuracy of two models of forecasting—Long Short-Term Memory (LSTM) and a hybrid model combining Support Vector Regression (SVR), Linear Regression (LR), and Gated Recurrent Unit (GRU)—with various amounts of housing. Against the performance comparison of these models with different numbers of houses, the research aims to establish the best model for given amounts, accepting the fact that a model can be good for one amount and bad for another. The outcome will indicate the predictability of the models as well as their suitability for scalable prediction of the housing demand.

### Outline of the content:

- A literature review of models used in energy forecasting.
- Make a dataset with different houses and house numbers from the load profile generation.
- Make a data processing to make the dataset ready for forecasting.
- Run the forecasting models for different houses and evaluate them
- Start to write the introduction and methodology for the thesis
- Once the results are finalized, the chapter of results needs to be written.

