

Development of a Graphical User Interface for a Load Forecasting Tool in Electrical Distribution Grids

Advancing anthropogenic climate change requires a rapid transition away from fossil fuels. The mobility and heat sectors, in particular, are facing significant transformation in the near future. With the market ramp-up of electric vehicles, the need for charging infrastructure is increasing. In addition to the expansion of heating networks, heat pumps will play an increasingly important role in the future provision of environmentally friendly space heating and hot water. The escalation of the conflict in Eastern Europe and the resulting global energy crisis is expected to accelerate the heat transition further. These trends will lead to a substantial increase in decentral loads in electrical distribution networks. Technical University of Applied Sciences Augsburg is developing a Python-based tool that can forecast changes in electrical power demand locally. This is a crucial tool for distribution grid operators to analyze their system's future expansion demand.

This work aims to develop a straightforward and user-friendly GUI for this existing Python tool so that network operators can use it intuitively.

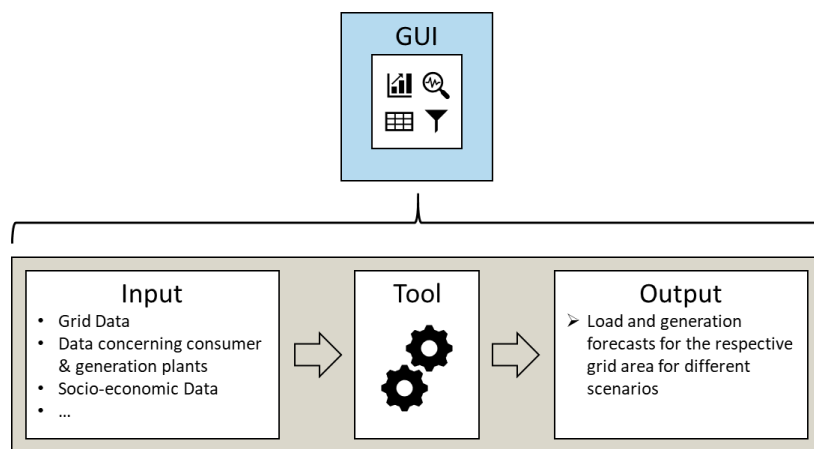


Figure 1: GUI Development for Load Forecasting Tool

Scope of the internships, applied study semester, or thesis.

During this work, a GUI shall be developed for an existing Python-Tool used for electric load forecasting. The supervisor of this work is Dominik Storch (Research Associate). Prof. Dr.-Ing. Michael Finkel is the mentoring professor and examiner of the work.

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Special requirements

- Experienced in Software Development
- Experienced in Python
- Basic knowledge about power systems is helpful but not obligatory

Qualification level: Advanced Bachelor's degree or Master's degree

Programs lines: SRI, A2S, BA/MA