Master-/Bachelor-Thesis:
„Development of a control model for flexible biogas production based on a neural network“

Project description:
In the coming years, the first biogas plants will fall out of the remuneration by the EEG. The control system to be developed should enable the plant operators of biogas plants to maximize the revenues on the power exchange in the day-ahead market while at the same time minimizing the use of substrate.

Through targeted feeding into the fermenter, quickly degradable fatty acids are introduced and thus the gas production is adjusted. However, this is not only dependent on the feeding intervals and the feeding quantity, but also on chemical and biological parameters in the fermenter. The control is based on a neural network and is fed with measured data from a real-time measuring system.

Tasks:
- Literary research (Control concepts, limits of flexibility of biogas plants)
- Data evaluation of existing measurement data
- Evaluation of the measured data and identification of the significant parameters for the control model
- Training and validation of a neural network

Requirements:
- prior knowledge in Python, Matlab
- First experience with neural networks

Das bieten wir dir:
- The topic addresses an important area of the energy turnaround by increasing the efficiency and flexibility of biogas plants.
- Cooperation in an innovative research project.
- Motivated team

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