AI Energy

AI synergy!

Energy needs AI and AI needs a lot of energy

ai forum UTCN

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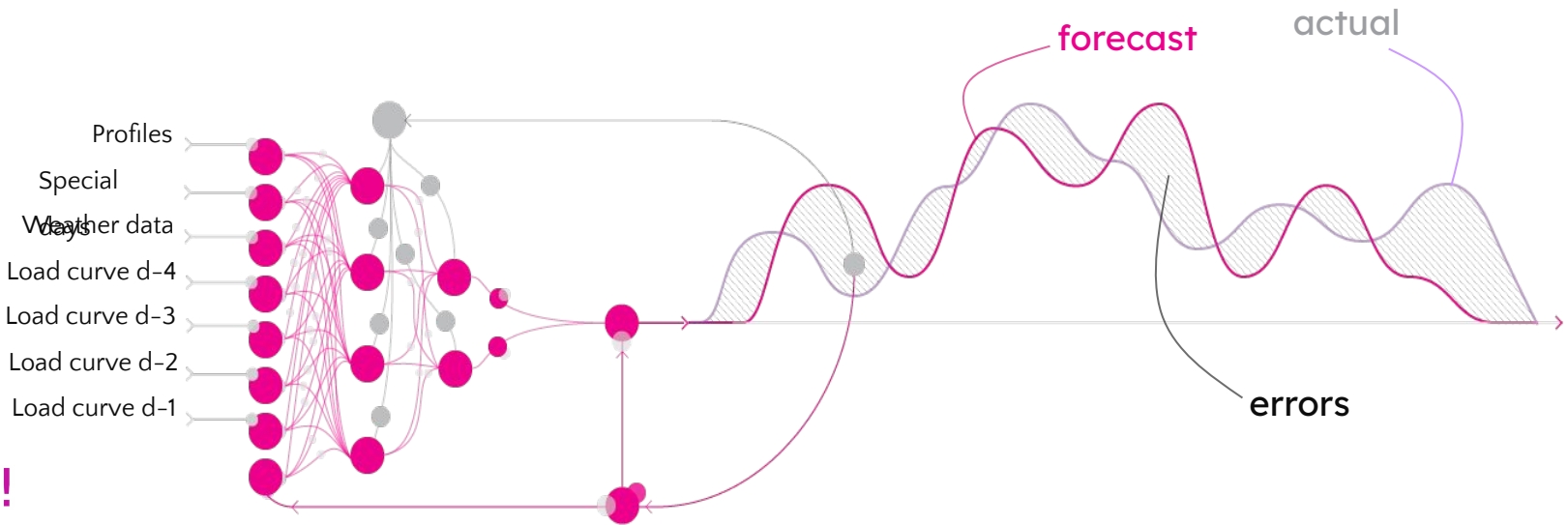
1. Energy FORECASTING

- Electricity demand forecasting
- Renewable energy production forecasting
- Electricity price forecasting

TensorFlow

Keras

Python, Tensorflow, Keras, Scikit-learn, Numpy, Matplotlib, Seaborn.



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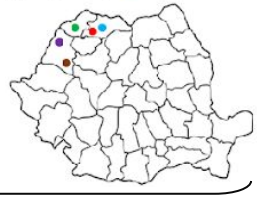
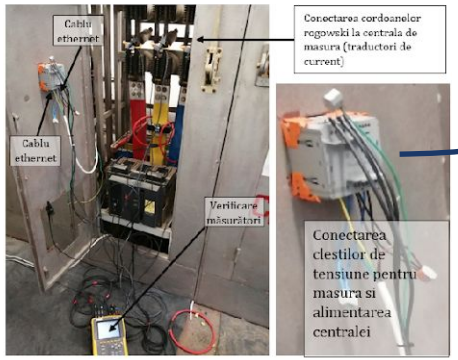
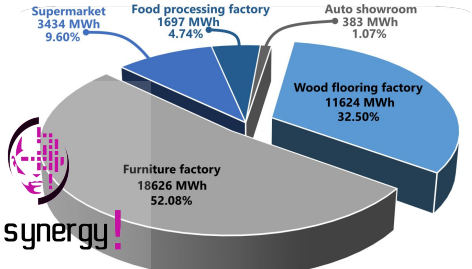
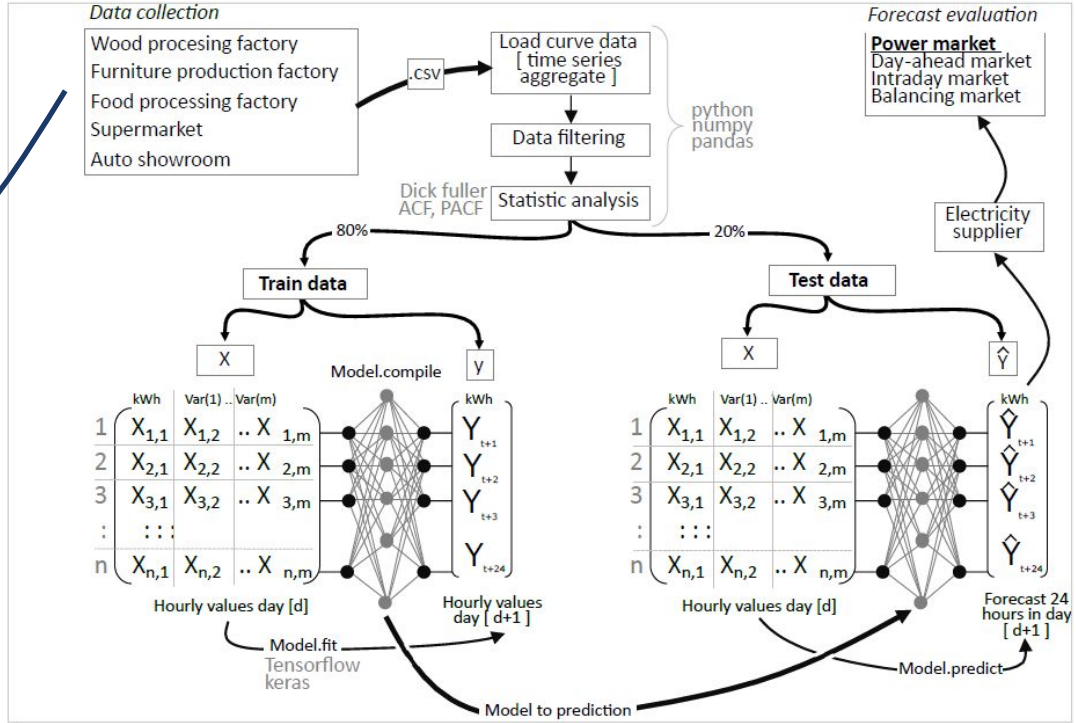
1. Energy FORECASTING

Factory 1(>1000 angajati)
Factory 2 (>500 angajati)
Autoshop (>2000 mp)
Supermarket (2000 mp)
Factory 3 > 50 angajati









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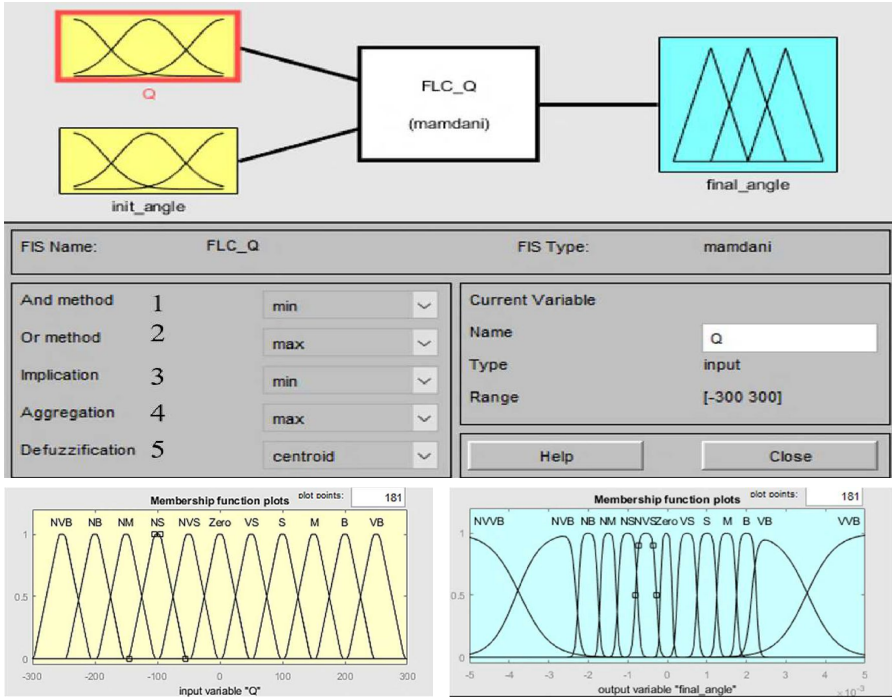
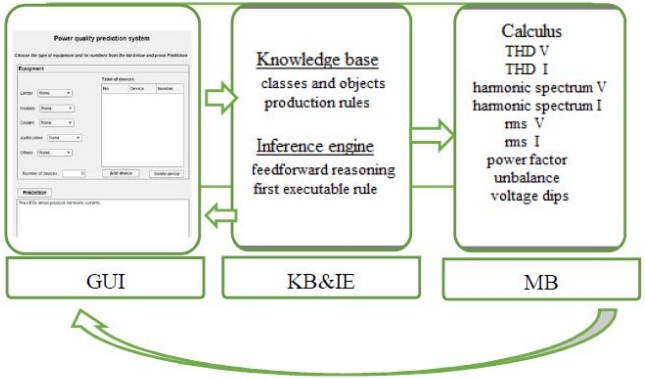
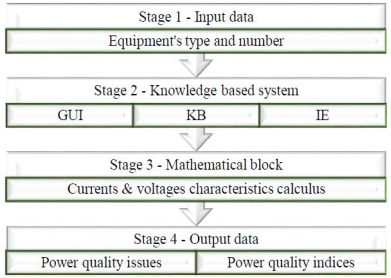
2. POWER QUALITY ANALYSIS

Power factor correction using fuzzy logic (Labview)



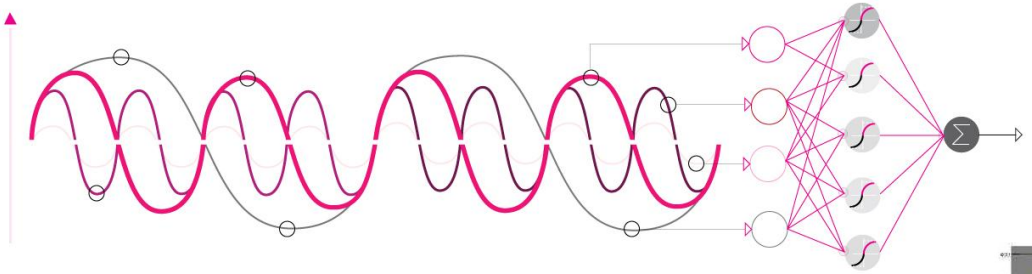
Prediction of power quality problems in residential consumers using ES (Matlab)

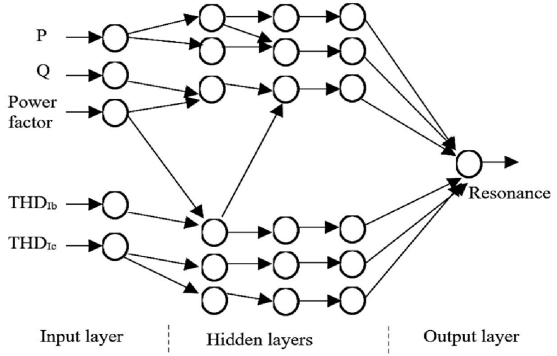


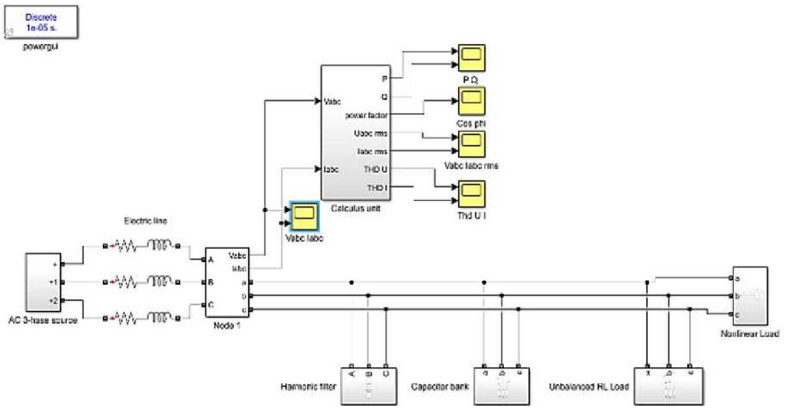


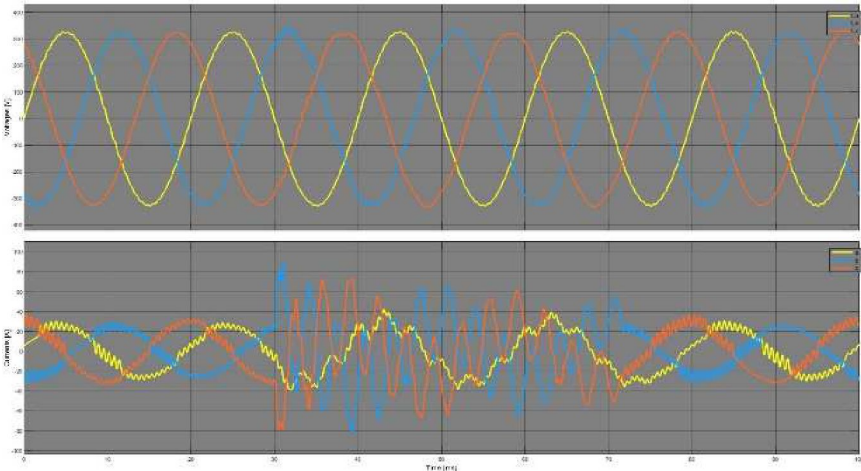
2. POWER QUALITY ANALYSIS

MatLab/Simulink model for the study of parallel resonance





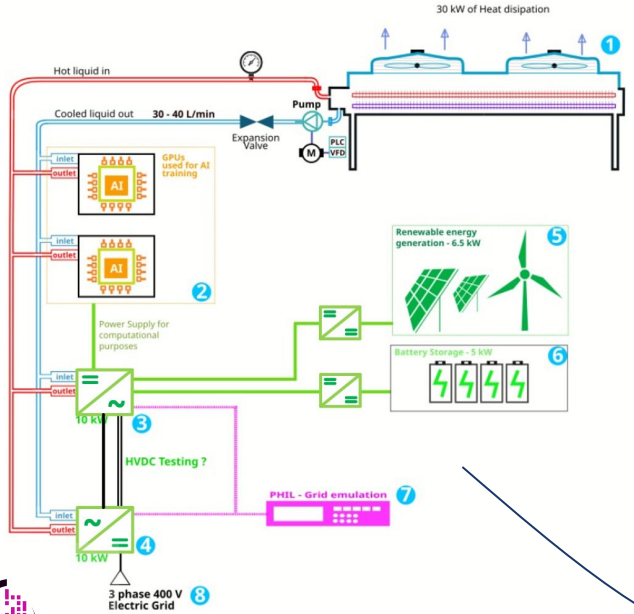




AI synergy!

3. POWER for AI

GPT-4, for example, required over 37 GWh, about 0.08% of the electricity that Romania generates in a year, and 50 times as much as for the formation of GPT-3, the previous iteration.




Electric cabinet


15 kVAr - Reactive power compensation


LINAX PQ3000 – power analyzer


CPU i9-12900K + nVidia RTX3050


Batteries


Reactance coil


Fluke 1775 – power analyzer


10 kW Cooling system


Testo 890 - IR camera

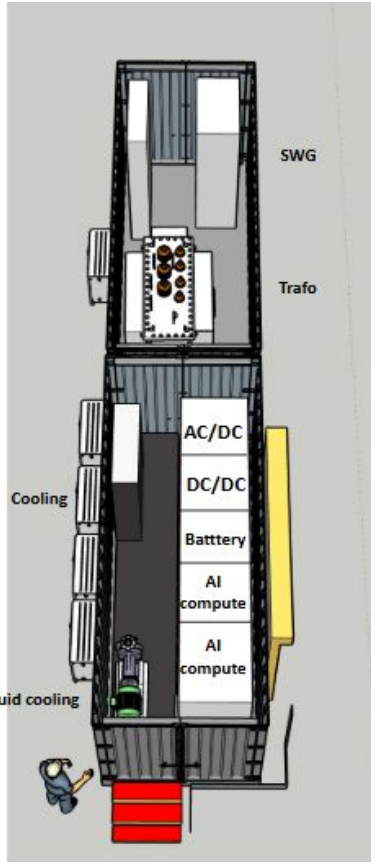

PLCs

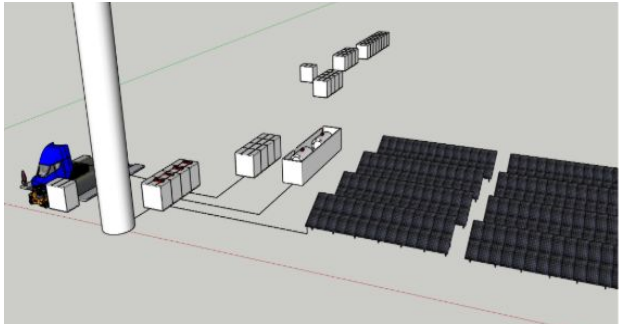

PV Panels

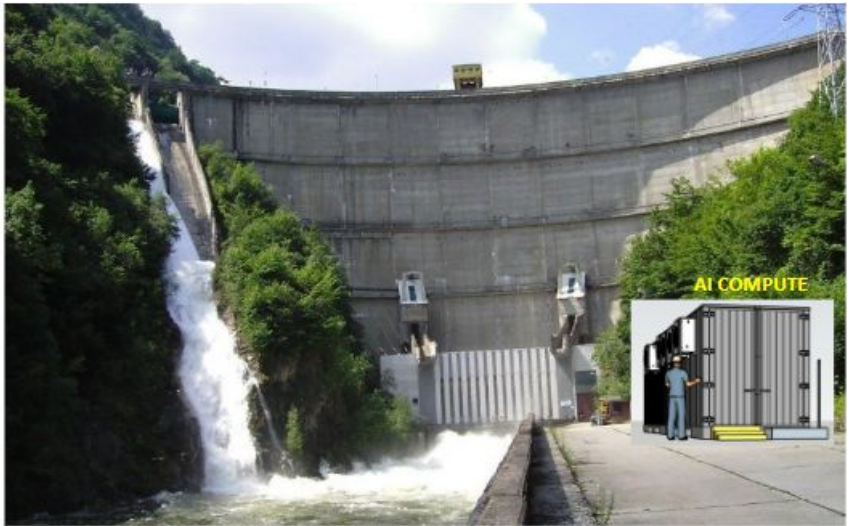
Infrastructure to power AI

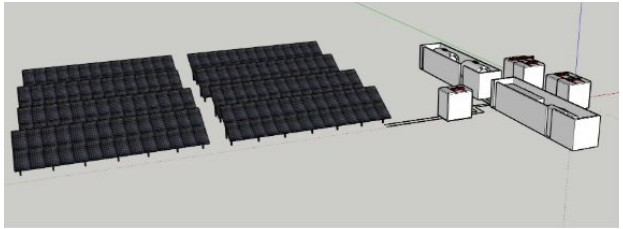
AI synergy!

3. POWER for AI









Collaboration inquiry/offer

Open for **research collaborations** and **joint research proposals** on

- Time series analysis
- Forecasting
- Power for AI infrastructure
- Fuzzy logic in power systems

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