Pattern Recognition / Machine Learning on Electrochemical High Frequency Time-Series

Description:

One topic in the frame of the public funded project HYLIFE is the characterization and in-situ monitoring of electrochemical reactors. Beside classical approaches like Electrochemical Impedance Spectroscopy (EIS) also interdisciplinary methods should be applied on the analysis of Electrochemical High Frequency Time-Series data, recorded by our own in-house measurement set-up. The content of the master thesis is the screening of known techniques e.g. in the domain of speech recognition like neuronal networks or machine learning and the utilization of the most promising methods to detect degradation and critical operation conditions inside fuel cell stack, based on high frequency current and voltage measurements. Knowledge of some script language like Python, R, Julia or other is valuable.

- **Content:**
  - Literature & algorithm search (1 month)
  - Training on Julia (1 month)
  - Data analysis (2 - 3 month)
  - Optional: participation in stack measurements (0 – 1 month)
  - Writing of the master thesis (1 month)

- **Start:** 01.08.2022
- **Duration:** ca. 6 Monate
- **Payment:** € 2.600,00
- **Contact:** Dr.rer.nat. Stefan Pofahl +43 (316) 873-9489, pofahl@hycenta.at
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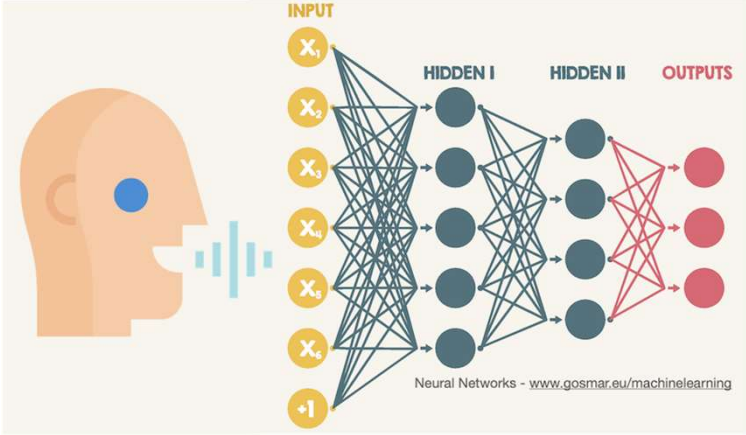

Principals of neuronal networks technique for the purpose of pattern recognition.

PEM fuel cell system at HyCentA FCS testbed

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