LINKÖPINGS UNIVERSITET

2022-08-10

Master Thesis Proposal

Combining models and data for age monitoring and prognostics of lithium-ion batteries

Batteries have become a central component for electrification of different systems, such as electric vehicles. One of the active research topics is developing methods for monitoring the battery health and track degradation is necessary to extend battery lifetime and reduce costs. Developing mathematical models that captures the physical degradation is time consuming and results in very complex models. Learning models from data is an attractive approach. However, the performance of data-driven models depends on the quality of training data and usually do not generalize well. Combining physical insights and machine learning is one solution to take advantage of both models and data.

In this master thesis project, the objective is to develop and implement hybrid approaches for battery health monitoring. The developed methods will be evaluated using data from battery experiments.

We are looking for students with skills and/or interests in modeling, signal processing, and machine learning.

If you are interested or have questions, please feel free to mail me:
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or come by my office in the vehicular systems corridor (B-building behind Café Java).

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