

Hyperparameter Optimization Course

November 13, 2020, 10:00 - 13:00

Forschungszentrum Jülich, Lecture hall

The course aims to teach you the basic knowledge of hyperparameter optimization such that an appropriate set of numerical parameters for a learning algorithm can be found. The acquired knowledge is deepened in a two-hour practical session using Jupyter Notebooks.

Content

Part I: Theory

- Train / development / test sets
- Regularization techniques (dropout, L1/L2-regularization)
- Optimization algorithms
- Batch normalization
- Grid search vs. random search vs. Bayesian optimization vs. gradient-based optimization vs. evolutionary optimization

Part II: Hands-on "Hyperparameter Optimization for Improving Neural Networks"

- Optimization of Jupyter notebooks using the Talos library for Keras
- Good practice guidelines for hyperparameter tuning.

Requirements for Part II: Laptop with Python3 + Jupyter Notebooks

Material for Part II: All tutorial notebooks will be available on GitHub

Trainers: Dr. Alexander Rüttgers and Dr. Charlotte Debus from DLR, Cologne

Prerequisites: Course participants should have basic knowledge in Python and Machine Learning.

Registration: The course is designed for 50 participants. There are no course fees, but you must cover the travel costs yourself.

Please register at hds-lee@fz-juelich.de by October 16, 2020.