



Deep Learning Cluster Statistics Back-end

Project Management and Software Development
for Medical Applications

General Info

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Project Description

To utilize all of the computational resources as efficiently as possible. For that reason, many researchers use open source cluster software to centralize the computations on a server. However, with many different users including students and visiting researchers it is difficult to keep track of the current number of experiments that run on the server. Therefore, we want to create a customizable Back-end that continuously logs statistics such as number of experiments, GPU utilization per Node, amount of failed experiments (and more). This database will be the basis for an accompanying front-end that visualizes the stats.

Student's Tasks Description

The student will define requirements for the proposed back-end solution and model the information flows graphically. Another task is to define interfaces to cooperate efficiently with the partner project (Deep Learning Cluster – Statistics Website). Ultimately the backend has to be programmed using different technical tools.

Technical Prerequisites

- Docker (Kubernetes)
- SQL
- Python
- Linux scripting
- REST interface

References

<https://polyaxon.com>

<https://kubernetes.io/de/>

<https://www.postgresql.org>

<https://swagger.io/tools/swagger-ui/>