"Big Data Storage and Distributed Machine Learning"

The Fraunhofer IBP is a multifaceted research and development institute within the Fraunhofer Society and works in all fields of building physics. The working group of building system solutions works, among other things, on analysis methods for discovering and identifying faults in the operation of building installations and for optimizing these operation procedures. In doing so, large quantities of building automation data are used to obtain information about the behavior of the installed systems.

Within the scope of the work, predefined algorithms from the area of machine learning are to be implemented using Apache Spark and integrated into an existing platform. The analyzes should be able to be used both in real-time on incoming data as well as on databases.

This includes the following tasks:
- Determination and definition of the required properties, in particular the data models and their implementation in an Apache Cassandra database
- Data migration from an SQL database
- Implementation of predefined algorithms in Apache Spark
- Integration of the Spark cluster into the platform with 'WSO2 Data Analytics server'

Desired personal attributes for the candidate:
- Study of computer science or a related subject
- Comprehensive knowledge of the methods of software design and in particular of data models
- Ideally experience with the implementation of Cassandra databases
- Extensive hands-on experience with the Java programming language, including JDBC
- Good knowledge in scripting languages, such as Python
- Basic experience with concepts of distributed computing processes (Map / Reduce)
- The ability to work independently into a new issue
- A conceptual and analytical approach as well as good communicative skills
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