

HiWi Position in Big Data Project

Complex innovations in medical engineering are not possible without collaborative co-operations today. However, the assembly of suitable experts is usually left to the initiating innovators themselves or fortuity. To tackle this problem, a new integrative competence model of medical engineering based on data mining algorithms has been developed by the institute of Applied Medical Engineering (AME). It identifies and proposes suitable actors based on published texts for a given project by matching experts from medical, technological and product-related fields to the project.

Specifically, the product-related dimension of the approach faces the problem of the correct assignment of patents (and the corresponding inventors) to designated competence fields in medical engineering. In the Pat-2-medTIM project we try to tackle this challenge by two different but complementary ways: on the one hand, a relation between information from medical products and patents is searched for, because medical products are easily assignable to competence fields and hence, the related patents are assignable to competence fields. On the other hand, we try to find publications of the patent innovators related to the project topics which are more easily assignable to competence fields than the patents themselves. At the chair of Information Systems we will focus on the latter approach.

We built up a Data Lake system which enables data ingestion and querying of data required for the project. It comprises a complex system architecture based on NoSQL technologies. The main task of this Hiwi job is the advancement and maintenance of the system environment. This task requires expertise from the fields of software engineering (Java/C#), database & system administration, and data modeling. Hence, the following skills would be beneficial for an applicant:

- ✓ NoSQL (especially Hadoop) & Relational databases (experienced)
- ✓ Object-oriented design and programming (experienced)
- ✓ Linux system administration

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