

Student Assistant: Linked Data Processing (MOSAIK)

Abstract

In the [BMBF](#) funded research project [MOSAIK](#) we are investigating methods for aggregating software components in a flexible and self-organized manner. Therefor we need some implementation work to be done on our Linked Data processing system [Linked Data-Fu](#).

Data

- Starting date: At earliest convenience
- Hours per month: 20h – 40h

Tasks

- Help with implementation work regarding Linked Data-Fu (Java)
- Possibly additional tasks in the scope of the MOSAIK project

Beneficial skills

- Profound knowledge of the Java programming language
- Familiarity with Linked Data, RDF and other Semantic Web technologies

Please contact [Daniel Schraudner](#) if you are interested.

Student Assistant: Self-Organizing Scenarios (MOSAIK)

Abstract

In the [BMBF](#) funded research project [MOSAIK](#) we are investigating methods for aggregating software components in a flexible and self-organized manner. Therefor we need some exemplary self-organization scenarios (e. g. ant colony foraging, self-organizing traffic lights, etc.) to be implemented using our Framework (including our Linked Data processing system [Linked Data-Fu](#)).

Data

- Starting date: At earliest convenience
- Hours per month: 20h – 40h

Tasks

- Implementing interesting self-organization scenarios

- Possibly additional tasks in the scope of the MOSAIK project

Beneficial skills

- Familiarity with the concepts of self-organization and emergence
- Familiarity with Linked Data, RDF and other Semantic Web technologies

Please contact [Daniel Schraudner](#) if you are interested.

Student Assistant: Integration of Bluetooth Low Energy Devices with Linked Data

Abstract

The Chair of Technical Information Systems has developed software that provides a [Linked Data](#) interface for [Bluetooth Low Energy](#) (BLE) devices. The so-called BLE-adapter runs on a Raspberry Pi and allows the integration of BLE-devices in bigger [Semantic Web](#) applications by offering a REST API. The major aim of this work is to reverse-engineer the protocols of BLE-devices which will help us to support those by our software.

Data

- Starting date: As soon as you can.
- Hours per month: 30h – 40h

Tasks

- Reverse-engineering of vendor specific BLE-protocols.
- Documentation of the results in a [Linked Data](#) format.
- Search for new, interesting BLE-devices that could be integrated into our system.
- Reporting bugs of the BLE-adapter.
- (Optional) Fixing bugs in the BLE-adapter

Beneficial Skills

The task can basically be done by any student with a connection to computer science. However, there are some skills that have a positive effect on an application:

- Attended the [Foundations of Linked Data](#) lecture.
- Basic knowledge of the Bluetooth Low Energy protocol.
- Experience in using command line tools.

Miscellaneous

Due to the current situation the student may conduct the work at home.
Please contact [Matthias Farnbauer-Schmidt](#) if you are interested.