E.ON Energy Research Center | RWTH AACHEN UNIVERSITY

Bachelor/Master Thesis:

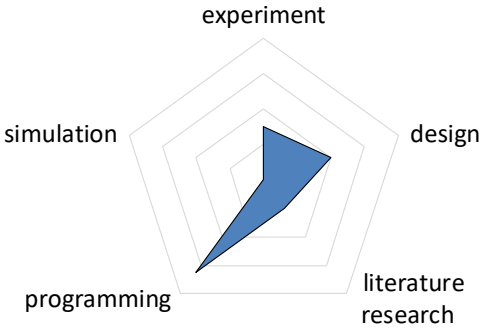
Interface communication development for a modular, microcontroller-based multi-sensor system in Python

Increasingly powerful microcontrollers and the constantly growing product range of cost-effective sensors enable countless hobby and citizen-science projects, reaching from automatic blinds control in one's appartment to Europe-wide air quality maps. In a research context, too, low-cost sensors and tailor-made sensor systems offer new possibilites that can be used, for example, to record comfort-relevant indoor parameters.

In this thesis you will develop and test a respective multi-sensor system prototype and implement the interface communication between sensors and a microcontroller. Programming skills (e.g. Python) are appreciated but not required.

Scope of work:

- ▷ Research on comfort-relevant indoor parameters
- ▷ Selection of suitable sensors (I^2C/Modbus, UART)
- ▷ Implementation of the interface communication between sensors and Raspberry Pi in Python
- ▷ Construction, test and validation of a prototype multi-sensor system



Our Profile:

E.ON Energy Research Center at Aachen University is concerned with concepts of sustainable energy supply that account for technical feasibility as well as social and economic aspects. Reduction of primary energy consumption in conjunction with increased indoor air quality is a major focus of research.

Contact:

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