University of Stuttgart

Institut für Energiewirtschaft und Rationelle Energieanwendung (IER)

Research Work/Bachelor Thesis/Master Thesis

„Comparison of Methods for Predicting Software Energy Consumption "

The increasing digitization has led to a heightened utilization of data centers, with software applications playing a pivotal role in this domain. Ensuring the sustainability of data centers is crucial, necessitating a profound understanding of the energy consumption of software applications and the application of efficient energy models.

Description

- Introduction to the topic of energy efficiency in data centers and software
- Selection of suitable methods for determining the energy consumption of software
- Detailed comparison of the selected energy models in terms of accuracy, robustness and applicability to various application categories
- Data collection trough real measurements and implementation of the models
- Conducting accuracy validations through real measurements and benchmarks
- Identification of challenges in the energy modeling of software applications

Requirements

We are seeking dedicated students who want to contribute to improving the energy efficiency of software. This research opportunity provides a chance to acquire in-depth knowledge in the field of energy modeling and gain practical experience in digitization, software architecture, and software development (Python).

Start of the Project: Immediate availability

If you are interested in this project, please get in touch with your current transcript, resume, and the date you would like to start

Contact:

Nicola Schuckert (M.Sc.)
Heßbrühlstraße 49a
70565 Stuttgart
T: +49/711/685-87815
E: nicola.schuckert@ier.uni-stuttgart.de

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