

Student Helper (SHK) Position: Sensor Data Collection & AI Models Testing

In the context of Industry 4.0, the deployment of IoT sensors has become integral to modern industrial operations, enabling real-time monitoring, automation, and data-driven decision-making. These sensors collect massive amounts of data—ranging from temperature and accelerometer readings to vibration analyses—that are crucial for optimizing processes and predictive maintenance. However, the sheer volume and variety of this data presents significant challenges in terms of storage, transmission bandwidth, and processing efficiency. This has led to a growing need for advanced solutions like AI-based data compression and efficient data labeling to manage and utilize sensor data effectively. Additionally, ensuring interoperability between devices from different providers and maintaining data quality are essential for harnessing the full potential of IoT in smart manufacturing environments.

We are looking for a motivated student helper to support our team in the following areas:

1. Sensor Data Collection:

- Gather data from various sensor devices provided by different manufacturers.
- Work with multiple data types, including temperature, accelerometer, and vibration data.
- Ensure accurate and reliable data collection by properly setting up and calibrating sensors.

2. Data Labeling:

- Accurately label collected sensor data to prepare it for ML models.
- Organize and maintain datasets for easy access and reference.
- Collaborate with the team to develop labeling guidelines and standards.

3. AI/ML Model Testing:

- Test our AI/ML models focused on data cleaning and preparation.
- Assist in evaluating model performance and provide feedback for improvements.
- Help in integrating cleaned data into our AI-based compression algorithms.

Required Qualifications:

- Enrolled in a Bachelor's or Master's program in Computer Science, Electrical Engineering, Data Science, or a related field.
- Knowledge of programming languages such as Python.
- Basic understanding of sensor technology and data acquisition.
- Familiarity with data labeling techniques and tools.
- Interest in AI and machine learning applications.
- Strong attention to detail and ability to work independently.

What We Offer:

- Hands-on experience with cutting-edge AI and data compression technologies.
- Flexible working hours to accommodate your study schedule.
- Mentorship from experienced professionals in the field.

To apply, please send a tabular CV and a short motivation letter in English to maroua.taghouti@tu-dresden.de. We are already looking forward to your application!