

HiWi - AI-Supported Management Tool for Enhanced Operational Safety

SOCS (Self-Learning Operational Command System) is an advanced management tool designed to provide self-learning service instructions both in central management hubs and through augmented reality directly at the vehicle site. It assists operators by delivering precise action guidelines to ensure the operational safety of robots. SOCS is designed to be scalable across different robots and environments by utilizing synthetically generated service cases.

In this research project, we aim to enhance user support for creating instructional guides through AI-assisted technology. A significant challenge is that instructions are often erroneous, incomplete, or unclear. Our AI-based solution targets this issue by offering accurate feedback, thus minimizing the need for human intervention. This approach ensures smooth system operations and reduces the reliance on specially trained personnel.

Key Responsibilities:

- Collaborate with a multidisciplinary team to develop and enhance AI algorithms for generating precise instructional guides.
- Conduct research on current methodologies and technologies in AI and augmented reality for user support systems.
- Implement and test AI models to improve the accuracy and clarity of service instructions.
- Analyze the effectiveness of AI-generated instructions and iterate on feedback to refine the system.
- Document research findings and contribute to the preparation of academic papers and presentations.

Qualifications:

- Enrolled in a Bachelor's or Master's program in Business Informatics, Data Science, or a related field.
- Strong programming skills in Python or similar languages.
- Familiarity with machine learning frameworks such as TensorFlow or PyTorch.
- Good communication skills and the ability to work effectively in a team.

Benefits:

- Gain hands-on experience in cutting-edge AI and augmented reality technologies.
- Work on a project with real-world applications and impact.
- Collaborate with experts in the field and expand your professional network.
- Flexible working hours and a supportive research environment.

Join us in advancing the future of robotic operational safety through innovative AI solutions!
If you are interested in this position, please contact **Janis Zenkner** (janis.zenkner@uni-mannheim.de).