Universität Stuttgart
Institut für Steuerungstechnik
der Werkzeugmaschinen und
Fertigungseinrichtungen

ICD / CA

Student Assistant (m/f/d)

Front-End Developer, Robotics Task Planning with Behavior Trees

Involved Institutes:

- Institute for Computational Design and Construction (ICD). Department for Computing in Architecture **(ICD/CA)**, Keplerstr. 11, 70174, Stuttgart
- Institute for Control Engineering of Machine Tools and Manufacturing Units **(ISW)**, Seidenstr. 36, 70174, Stuttgart

Position Overview: ISW and ICD/CA are collaborating to introduce robotic automation in building construction prefabrication. The research focuses on automating robotic task planning using behavior trees, which are effective behavior modeling methods used in video game development, and AI-based task planning methodologies. We are developing a console application backend for defining and executing robot tasks and now aim to create a graphical user interface to improve user interaction and usability.

Responsibilities: You will be tasked with designing and implementing the user interface for our behavior tree-based method. Your primary responsibilities will include:

- Developing a frontend application to enable users to visualize and interact with behavior trees
- Implementing functionalities allowing users to define, modify, and manage behavior tree elements (such as actions, control nodes, the root node, etc.)
- Integrating the frontend with the existing C# backend console application
- Identifying and wrapping external planning tools and libraries to be used in our method

Requirements: To apply, you must be:

- A student at the University of Stuttgart
- Skilled in C# and JavaScript programming
- Interested in learning Monticore workbench, behavior trees, and robot task planning
- Available for working 30 hours per month

We offer you:

- Flexible working hours
- Opportunity to work in an interdiciplinary and friendly environment
- Free coffee and tee!

Application Process: If you are interested, please send your resume and a motivation letter to the following email address: shermin.sherkat@icd.uni-stuttgart.de

We will review your application and contact you to schedule an interview. We look forward to receiving your application and potentially welcoming you to our team!