Master thesis in Infineon, Villach

Job description

Fabrication of modern semiconductor devices is a complex process involving hundreds of production steps. Fabrication planning is a complex activity demanding experts to create an ordered sequence of production steps that satisfy multiple constraints, such as product and tool requirements. The current activities of Infineon resulted in the creation of a knowledge graph (KG) comprising various information about production actions and the fabrication environment where they can be executed.

This position focuses on the development of a planning approach that, given a knowledge graph and a set of product requirements, can construct a production plan optimal with respect to a selected criterion, e.g., the minimal number of steps. The approach should be able to (a) construct production plans from scratch or a partial plan, (b) verify a set of existing plans for consistency, e.g., if they all can be executed on the same tool setup, and whenever possible, (c) suggest repairs to identified inconsistencies. During the internship, you will focus on the following points:

- Define the fabrication planning problem and identify data sources for its inputs.
- Perform a literature review to identify suitable planning approaches.
- Suggest improvements to the KG data required by the selected planning method.
- Implement planning methods for the three tasks listed above.
- Write a master's thesis during the internship.

Application deadline: April 30, 2024 (position will be occupied as soon as a candidate is found)

Profile

You successfully meet the requirements if you are a motivated and committed student in Computer Science, Electrical Engineering, or similar. You are best equipped for this task if you additionally have the following qualifications:

- Knowledge of planning approaches, including standard languages, like PDDL, and basics of planning methods. Experience with logic programming, like
- Basic knowledge of semantic technologies, such as ontologies, RDF, and SPARQL; experience with graph DBs is a plus.
- Self-motivated and proactive working style
- A basic understanding of the cloud infrastructures, e.g., OpenShift and containers, is a plus

At a glance

Location: Villach
Experience: Entry level
Start date: as soon as possible
Duration: 1 year
Type: Full-time
Contract: Temporary

Contact

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Please attach the following documents (English or German) to your application:

- Motivation letter
- CV
- Transcript of records