TUM

Technical University of Munich

Faculty of Mechanical Engineering

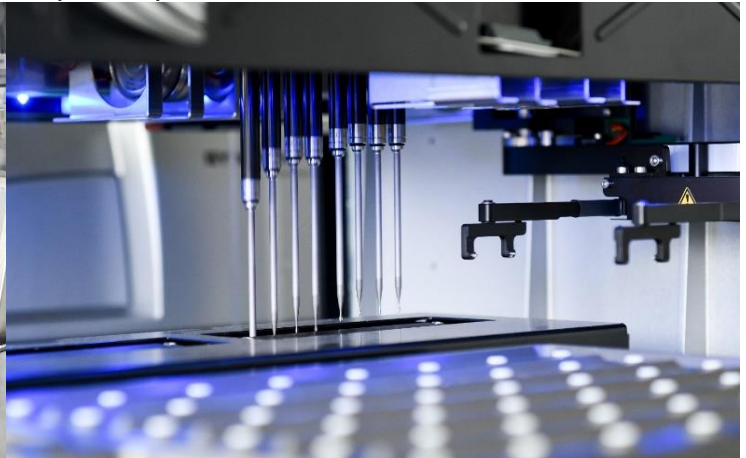Prof. Dr.-Ing. Dirk Weuster-Botz · Institute of Biochemical Engineering· Boltzmannstr. 15 · 85748 Garching

Laboratory Automation:
Implementation of device drivers and contribution to the open-source Standard in Laboratory Automation (SiLA 2)
(HiWi)

Context

Our research group works on new concepts to reduce bioprocess development cycle times by introducing automation and digitization into the biotech laboratory. We use the Standardization in Laboratory Automation (SiLA 2) standard to integrate our devices into our laboratory control software (IoT application).

We are a member of the SiLA 2 working group and are actively involved in the development of the standard specifications and the python implementation thereof.

SiLA 2 is open-source and provides a high level device interface for rapid integration into automation workflows. The standard is currently being implemented in several programming languages (Python, C++, C#, Java), although none are fully compliant to the standards specifications yet.

Your profile
- You are proficient in either English or German
- You have previous programming experience (e.g. Python)
- You enjoy collaborative work on open-source projects
- You are interested in single-board computers (BeagleBone), network communication (gRPC) and hardware interfaces
- You can work independently

Feel free to contact us for a tour through our lab!

For further information on the standard check out the base repository on GitLab:
https://gitlab.com/SiLA2/sila_base

Job description

At our institute we are already using the python implementation to integrate most of our devices into our automated workflows. Regular version updates and the incorporation of new features requires a fair maintenance effort for existing drivers. This position will involve:

- Implementation of new device drivers
- Updating of existing device drivers
- Writing and execution of tests (Write unit-tests)
- Help with the development of the open-source SiLA 2 python repository

No prior knowledge of bioprocess engineering or biochemistry is required. Due to the current situation, the position will be mostly home office based.

Contact:

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