

WISSENSCHAFT UND WIRTSCHAFT IN EINEM JOB GEHT NICHT.

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**Fraunhofer**

## PH.D. SCHOLARSHIP IN SOFTWARE ENGINEERING FOR ROBOTICS AND AUTOMATION

The key focus of research and development at Fraunhofer IPA is to find solutions to organizational and technological challenges, with special focus on the production environment of industrial enterprises. Our R&D projects aim to enhance production processes and make products more cost-effective and environmentally friendly by identifying and exploiting the potential for automation and streamlining at customer companies. From inception to pilot, we value scientific excellence as much as pragmatic engineering.

Our Robot and Assistive Systems department develops robot solutions and supporting technologies for application fields such as manufacturing, logistics, robot-assisted living. A significant example of our R&D work is the Care-O-bot 4 technology platform, a technology test bed as well as a product commercialized by one of our spin-off companies. Other examples include pilot lines deployed in real production environments for reconfigurable manufacturing of automotive components, and machine-to-cloud software stacks to monitor assets, drive machinery, and optimize production processes.

A key enabler towards our vision is software: open, accessible, certifiable. We actively pursue the topics of open-source, model-based engineering, functional safety as its core traits, in the context of consulting work for best-in-class private customers and of projects such as RoboShield, ROS-Industrial, ScalABLE 4.0, and the Service Robotics Network, to name a few. We benefit from generous public funding from German state and federal governments, as well as from the European Commission.

The advertised position is a 3-years scholarship funded by a major private customer of Fraunhofer IPA. The selected applicant will be expected to contribute both scientific innovation and real-world engineering in the context of manufacturing for the automotive industry. She or he will investigate ways to optimize, execute, and improve at runtime high-level assembly plans on a new generation of production lines prototyped by the customer in cooperation with Fraunhofer IPA. The candidate will be offered the opportunity to continue his employment at the sponsoring customer after graduation.

The selected candidate is expected to start on April 2019, or soon thereafter.

### Research Topics:

- Vertical integration from machine to cloud: from automation hardware to higher-level infrastructure (MES, ERP)
- Horizontal integration of robotics and automation devices
- Planning of assembly sequences

### Required:

- Master in Computer Science, Electrical/Computer Engineering, Mathematics, Physical Science, or related degree, with above average grades
- Excellent analytical and algorithmic skills: clear thinking, clear coding
- Excellent communication skills in English, written and spoken

### Preferred:

- Experience in software development for mechatronic systems or embedded systems (PC and/or PLC platforms)
- Functional programming
- Virtual machine and container technologies
- Ability to cope with stress, tight schedules, underspecified problems

### Interested?

Please include the following documents with your application: Cover letter expressing your motivations and ambitions, CV, copies of all academic qualifications (including school education), relevant references and certificates.

### Contact HR Department:

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### Contact Robot and Assistive Systems:

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