Lecture Winter Term 2017/2018
Industry 4.0

Lecture period: Fridays, 09:45-11:15, Oct. 20, 2017 - Feb. 9, 2018

New LECTURE

For students of the Dept. of Computer Science

Location: Seminar room 001, Building 40.28

Lecturer: Prof. Dr.-Ing. Torsten Kroeger

Content:

- Basics and foundations of Industry 4.0 and IoT
- Distributed systems
- Real-time and non-real-time systems
- Software and safety
- Security in Industry 4.0
- Middleware: definition and concepts
- Software technologies
  - Data Distribution Service (DDS)
  - OPC Unified Architecture (OPC UA)
- Extensibility
- Data collection, storage, and analytics
  - Information modeling
  - Parameter identification
  - Big data in Industry 4.0
  - Condition monitoring
  - Machine learning
- Human-centered developments and user interfaces
- Application examples
  - Automated guided vehicles
  - Distributed machine control
  - Automated warehouses
  - Industrial process optimization
  - Home automation, assistants, and robots