

# Malte Josten

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## Work Experience

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### University of Duisburg-Essen (Duisburg, Germany)

2020/04 - today

*Research Assistant, full-time*

2023/06 - today

- [QuantumNRW] Conceptualizing new teaching concepts to introduce school and college students to quantum computing
- [QuantumNRW] Developed an augmented reality app for iOS devices using Unity and C#, and created 3D-models and animations of quantum computing processes and principles.
- [FooSH] Developed a Java Spring Boot Framework to connect arbitrary outcome-oriented (AI-driven) prediction models to an existing smart home system by providing necessary abstractions and a sophisticated REST API. This enables users to define goals (outcomes) instead of multiple instructions, to ultimately reach a desired smart home state.
- Continued work on the projects hKI-Chemie and Boarding

*Research Assistant, part-time*

2022/10 - 2023/05

- [hKI-Chemie] Developed a virtualization tool in form of a web application using JavaScript, HTML, and CSS to evaluate user behaviour during AI nudging studies
- [hKI-Chemie] Developed a cross-platform, AI-assisted web tool for route-planning of cargo wagons in an industrial rail park using a JavaScript/HTML frontend and Python backend
- [Boarding] Project management, development, and administration

*Student & Scientific Assistant, part-time*

2020/04 - 2022/09

- [AR-InGo] Developed an augmented reality app for iOS devices using Unity and C#, incorporating 3D-models of scientific instruments and experiments (at the nanometer level) created with Blender.
- Teaching and tutoring students in the courses Computer Architecture, Computer Networks and Communication Systems, Internet Technologies and Web Engineering, and Operating Systems.

### Freelance Web Developer (North Rhine-Westphalia, Germany)

2021/12 - today

*Freelancer*

- Designing, deploying, and maintaining websites using the WordPress ecosystem

### Netto Marken-Discount (Mülheim an der Ruhr, Germany)

2017/10 - 2019/10

*Temporary Retail Worker, part-time*

### Krankikom GmbH (Duisburg, Germany)

2015/01 - 2015/02

*Internship, full-time*

- Web design, project management and administration, and agile software development

## Education

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### University of Duisburg-Essen (Duisburg, Germany)

2017/10 - today

*PhD Student (Dr.-Ing.) at the chair for Distributed Systems*

2024/01 - today

- Research areas: Explainable Security in Distributed Systems, Longevity and Sustainability of Software Systems

*Master of Science in Applied Computer Science (Grade: 1.3, with distinction)*

2021/04 - 2023/12

- Focus: Distributed, reliable systems
- Thesis: "FooSH: A Framework for outcome-oriented Smart Homes" (Grade: 1.0)

*Bachelor of Science in Applied Computer Science (Grade: 1.6)*

2017/10 - 2021/03

- Thesis: "Development of an augmented reality app for iOS devices to control IoT devices" (Grade: 1.0)

## Projects

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### EIN Quantum NRW

2024/01 - today

Developing a modern and digital education concept for school and university students to introduce them to the world of quantum computing.

### Boarding: Automated Attendance Checks

2022/09 - today

Developing a GDPR and Common Criteria (EAL 4+) compliant cross-platform mobile application for automated attendance checks for university-related events, e.g., exams.

### hKI-Chemie: Human-centered AI in the chemical industry

2022/06 - 2024/06

Researching and developing self-explainable AI solutions to:

- Optimize processes with the help of AI-based process parameter evaluation
- Support employees in identifying process problems at an early stage and selecting suitable solutions
- Availability of machine-learned connections across shifts and personnel changes

### AR-InGo: Augmented Reality for Engineering

2020/01 - 2022/04

Developed a modern and digital education concept for school and university students visiting the NanoSchoolLab. The concept provides easily comprehensible 3D models of complex scientific instruments and experiments (including SEM, STM, and solar cells), and uses gamification mechanics to encourage a playful learning experience.

## Activities<sup>1</sup>

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<b>Reviewer</b>	International Conference on Intelligent Environments	2025
	International Conference on Pervasive Computing and Communications	2025
<b>Web Chair</b>	International Conference on Internet of Things	2024
<b>Organiser</b>	International Workshop on Security and Privacy-Preserving AI/ML	2025
	International Workshop on Negative Results in Pervasive Computing	2025
	International Workshop on Longevity and Sustainability of IoT Systems	2024
	International Workshop on Negative Results in Pervasive Computing	2024
<b>Member</b>	Appointment Committee, W3 Professorship "Verification of Complex Systems"	10/2024 - today
	IEEE CS SYP Micro Mentoring	09/2024 - today

## Skills

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### Languages

- German (Native)
- English (Full professional proficiency)
- French (Elementary proficiency // B1, though quite some time ago)
- Mandarin (Elementary proficiency // HSK 1)

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<sup>1</sup>voluntary