

Richard Hanß

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PROFESSIONAL SUMMARY

Full-stack developer and Computer Science M.Sc. graduate (TU Berlin, grade 1.1) with a focus on modern web development, 3D/WebGL engineering, and AI integration. Led web development at Fraunhofer FOKUS, building production tools used in active research — including a LIDAR visualization platform and an automated submission pipeline. Created an end-to-end neural indoor localization system achieving human-scale accuracy using synthetic WebGL-generated training data. Currently developing a language learning platform powered by React Native and Claude API.

CORE SKILLS

Web Development: HTML/CSS, JavaScript, TypeScript, React, React Native (Expo), Next.js, Tailwind/NativeWind, Zustand, Node.js, Express, REST, GraphQL, SQL, Three.js, React-Three-Fiber, WebGL/GLSL, WebXR, jQuery

Artificial Intelligence: Python, PyTorch, NumPy, Claude API (Sonnet/Haiku, streaming SSE)

Backend Infrastructure & DevOps: UNIX, C/C++, Java, Docker, Kubernetes, AWS, PostgreSQL, MongoDB, SQLite, nginx, CI/CD Pipelines

Development Practices: Git workflows, API design, security best practices (JWT, OAuth2, AES-256-GCM), technical documentation, Agile & waterfall

Languages: Native German, Fluent English, Conversational Japanese

PROFESSIONAL EXPERIENCE

Full Stack Developer (Working Student)

Sept. 2024 - Sept. 2025

Fraunhofer Institute for Open Communication Systems, Berlin, Germany

- Served as the primary web developer on a LIDAR scan visualization tool for internal research use, owning the web architecture, API design, UI redesign, error handling, and resilience (retries, graceful degradation)
- Authored technical documentation for 2+ years of legacy code, improving long-term maintainability
- Developed and deployed an automated validation platform for architectural submissions, replacing a manual email-based workflow and reducing turnaround from hours/days to minutes

EDUCATION

Title	Grade (<i>lower is better</i>)	Graduation Year
<i>Technical University of Berlin, Berlin, Germany</i> Master of Science: Computer Science	1.1	2025
<i>KAI Japanese Language School, Tokyo</i>	CEFR B1-B2	2023
<i>Christian Albrecht University of Kiel, Kiel, Germany</i> Bachelor of Science: Informatik (Computer Science)	1.8	2022

PROJECTS

[Neural Indoor Localization — M.Sc. Thesis](#)

Built a WebGL-based synthetic data generation tool with custom GLSL shaders and a guided 4-step UI, and trained a neural localization model (ResNet/MobileNet) achieving 1.68m median accuracy across a 66x42m office building using purely synthetic training data. Supported distributed multi-GPU training with automated experiment management.

[XR-DVBI](#)

Designed and built a WebXR TV streaming app using TypeScript, React, Three.js, and Zustand; led 3D environment design and day/night lighting systems. Integrated the open DVBI broadcast standard. Demoed at Fraunhofer FOKUS.

[GrammarCrammer](#)

Designed and built a full-stack AI grammar learning app with a React Native (Expo) frontend and Node.js/Express backend. Features streaming AI explanations and dynamic flashcard generation via Claude API, JWT authentication, and production deployment via nginx/systemd. Currently supports iOS and web.