

Torge Hinrichs

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Profile

Software security specialist with a strong research background in vulnerability detection and software analysis, soon completing a PhD. Skilled in creating novel analysis techniques, implementing from proof of concepts to full production ready tools, and communicating results to diverse stakeholders. Experienced in international research projects and collaborations with industry and academia. Open to R&D and leadership roles.

EXPERIENCE

Hamburg University of Technology

05/2022 – today

Security Researcher, PhD (<https://www.tuhh.de/softsec/homepage>)

Hamburg, Germany

- Conducted independent research focused on machine learningbased vulnerability detection, contributing to advancements in automated security analysis
- Reviewed and evaluated scientific manuscripts for leading conferences and journals, ensuring high academic and technical standards
- Supervised undergraduate and graduate theses and research projects, providing academic guidance and technical mentoring
- Designed, delivered, and supervised security-focused laboratory sessions and lectures, developing practical and theoretical cybersecurity skills among students
- Publications: <https://scholar.google.com/citations?user=VI87IocAAAAJ&hl=de>

HAW Hamburg

03/2020 – 05/2022

Project lead, digitization project OPPSEE (<https://about.oppsee.de/>)

Hamburg, Germany

- State-funded project (Hamburg), 2 employees + 5 students.
- Managed and optimized project budgets, ensuring cost efficiency and alignment with organizational objectives
- Led project planning and execution, including timeline development, resource allocation, and risk management
- Designed and maintained scalable software architectures (Go-Lang + Kubernetes) to support system performance, reliability, and future growth
- Provided technical and team leadership, mentoring team members, coordinating cross-functional efforts, and driving project success.

HAW Hamburg

03/2018 – 05/2022

Research assistant

Hamburg, Germany

- Developed and maintained automated testing and analysis systems to support research and applied projects
- Conducted independent strategic research and development, including technology transfer to industry and institutional partners
- Designed, developed, and delivered academic courses and lab sessions, serving as both instructor and teaching assistant

Verified Systems International

03/2016 – 03/2018

Test-engineer / Test Analyst / Developer (<https://www.verified.de/>)

Bremen, Germany

- Designed and implemented simulation software for complex technical systems in aerospace and railway domains
- Developed and executed verification and validation tests for safety-critical systems in compliance with SIL C standards
- Analyzed, reviewed, and maintained technical documentation and test specifications to ensure regulatory and quality compliance

HAW Hamburg

Teaching assistant / Tutor

03/2016 – 03/2018

Hamburg, Germany

- Supported lab sessions and developed new practical exercises for software testing and formal methods courses
- Contributed to curriculum development for certification and academic programs, including ISTQB Certified Tester
- Supervised student projects, including the Bachelor project on continuous integration for embedded systems

GFN AG

Lecturer in advanced training

11/2013 – 02/2016

Hamburg, Germany

- Delivered independent professional training courses in Java (OCA, OCP, EE) certification programs
- Conducted lectures and workshops for Webmasters Europe certifications in online marketing and web development
- Designed course materials and assessments to support certification success and professional skill development

PROJECTS

Reviewer for Scientific Journals

- Regularly invited to serve as a peer reviewer for leading, high-impact journals in the field, including Empirical Software Engineering (EMSE), Journal of Systems and Software (JSS), and Science of Computer Programming (SCICO).

Sleep Journal & Med Journal

- Co-Founder of Extrahourdevs GmbH: Developing accessible and privacy-first mobile applications that digitizes and customizes medical journals, enabling patients, especially blind and visually impaired users, to securely record medical data on their smartphones while allowing clinicians to efficiently collect and analyze the information.
- Homepage: <https://extrahourdevs.com/sleep-journal/>
- Technologies: Flutter, Dart, Go-lang

Obsidian Plugin: PARA Shortcuts

- Adds useful commands to the Obsidian note-taking app to set up and manage your knowledge using the PARA method.
- 6,500 downloads, 29 Stars on Github <https://github.com/gOATiful/para-shortcuts>
- Technologies: TypeScript, React

EDUCATION

Hamburg University of Technology

Doctor of Philosophy, PhD in Computer Science

05/2022 – today

Hamburg, Germany

- **Status:** About to submit
- **Thesis:** Working Title: Improving Vulnerability Detection Techniques using modern machine learning approaches.

Hamburg University of Applied Sciences (HAW Hamburg)

Master of Science in Computer Science (Informatik)

Sep. 2014 – Sep. 2017

Hamburg, Germany

- **Grade:** Very Good
- **Thesis:** IT Security in Future Digital Railway Control Systems Risk Assessment and Analysis Approaches (Grade: Excellent)
- **Focus:** Cybersecurity, Critical Infrastructure Protection, Embedded Systems

Hamburg University of Applied Sciences (HAW Hamburg)

Bachelor of Science in Technical Computer Science (Technische Informatik)

Sep. 2011 – Aug. 2014

Hamburg, Germany

- **Grade:** Good
- **Thesis:** Identification of Geometric Objects in 3D Point Clouds (Grade: Very Good)
- **Focus:** Embedded Systems, Computer Vision, Signal Processing

- **Grade:** Good
- **Specialization:** Physics and Mathematics

SKILLS

Technical :Python (proficient), Dart, TypeScript, Golang, Git, LaTeX, Torch, CodeQL, Joern, Testing and Automation Frameworks, MS Office, Linux, BurpSuite, Gitlab, GitHub, PublishOrParish, Bash, SAST tools, software security, threat modelling, Datenschutz, automation, software architecture, static analysis, ISO 9001, ISO/IEC27001, DO178-B, CENELEC EN50128, NIST, C/C++, Java, Docker, Jupyter notebooks, SQL

Languages : German (Native), English (Business Fluent), Dutch (Basic)

Soft Skills : Analytical thinking, communication, collaboration, teamwork, leadership, strategic thinking, rapid learning, research methods, empirical research, mining software repositories, ongoing professional development