Msc. Ing. Thomas Tacke - Software Engineer

About

Passionate **Software Engineer / Software Architect** with a Master of Science (M.Sc.) in IT Security from **Ruhr-Universität Bochum**. With a strong foundation in applied informatics, I have a demonstrated history of designing and developing scalable applications using **Node.js**, **C#**, **Angular**, **Python** and microservices architecture.

My enthusiasm for **new technologies** and **security development** drives me to continuously explore and implement innovative solutions. In addition to my professional experience, I actively manage personal projects utilizing **Docker** and version control, showcasing my skills in **system administration** and self-hosting applications.

I am eager to contribute to the development of both existing and new applications as a **Fullstack Engineer/Architect**, bringing a comprehensive understanding of security practices to the software development lifecycle.

Contact

Im Maisel 11, 65232 Taunusstein
+49 178 1863598
thomas@tacke.email
https://thomas.tacke.email
Xing/Thomas_Tacke7
LinkedIn/thomas-tacke
Github-Personal/ThomasTacke
Github-Company-JustStats/ttacke-ops
GitLab/RootTheKid (Outdated, moved to GitHub)

Download this CV

Work-Experience

2020 - Now

Software Engineer / Software Architect@Intel

- → Transitioned **on-premises GitLab CI/CD** systems to a cloud-based **GitHub VCS** with **GitHub Actions** and **Jenkins**, enhancing scalability and simplifying maintenance.
- → Created **reusable GitHub Actions** for standardized workflows, significantly boosting CI/CD efficiency.
- → Managed Active Directory roles for department access controls and security.
- → Led **documentation initiatives** with **DocFX** and **mkdocs-material** to improve knowledge sharing and team onboarding.
- → Developed a **Redis**-based **publish-subscribe** system in **C#** for real-time, bidirectional service communication.
- → Designed a machine learning database in **Entity Framework**, supporting predictive analytics on test data.
- → Built **Python unit tests** with **pytest** to ensure high coverage and functionality.
- → Enhanced CLI experience for a confidential **LLM** project by moving from **argparse** to **Python Typer**.
- → Developed services for automated test result uploads to **Splunk** and **Jira**, optimizing reporting.

2017 - 2020

Software Engineer @Intel

- → Developed **microservice-based** applications with **NodeJS**, **.NET Core**, and **Angular**, delivering both web and desktop apps using **Electron.**
- → **Maintained and modernized legacy systems**, including a **Perl**-based regression tool, creating new services to enhance stability.
- → **Advised on secure coding practices and architecture**, supporting team projects with best practices.
- → Migrated legacy projects to a **GitLab CI/CD** pipeline integrated with **Kubernetes**, improving scalability.
- → **Mentored working students** and oversaw bachelor thesis projects, fostering a collaborative team culture.
- → Transitioned to **remote work** in early 2020, maintaining full productivity.

2015 - 2016

Software Developer (Working Student) @Intel

- → Developed internal tools to improve department workflows, collaborating with senior developers on functionality.
- → Built an **XML End-to-End encryption** utility in Java, enhancing secure data transmission.
- → Refactored and maintained **Perl**-based legacy systems for stability and compatibility.
- → Applied **Java, Perl**, and **XML encryption** knowledge to practical development challenges, supporting continuous code optimization.

2012 - 2013

System Administrator (Working Student) @Chair for System Security

2008 - 2011

Software Developer (Dual Study Program) @Sage

- → Supported development team by applying academic knowledge and self-learning.
- → Improved a **BI (Business Intelligence)** solution by optimizing backend components in **C#** for better performance and maintainability.
- → Built and extended custom applications for advanced data analysis and reporting within the BI platform.
- → Collaborated with senior developers and stakeholders to gather requirements and deliver tailored solutions, bridging academic concepts with practical development.

2007 - 2008

Civilian Service @General Hospital Hamelin

Education

2011 - 2016 — Master of Science - IT Security @Ruhr University Bochum

2008 - 2011 — Bachelor of Science - Applied Computer Science @Cooperative State University Baden Wuerttemberg

2004 - 2007 — University-entrance diploma - Informatics @Eugen-Reintjes-Schule

Languages

Language	Skill-Level
German	Native speaker
English	Fluent in speech and writing

Programming Skills

C# Programming

- C#
- ASP.NET Core
- Entity Framework

Skills

Markup Languages

- HTML5/CSS3
- Markdown

DevOps

- Docker
- Github/Github Actions
- Rancher/Kubernetes

Publications

Bachelor Thesis – Development and implementation of a secure WLAN concept

This thesis focuses on the development and deployment of a **secure WLAN** solution for multiple establishments. Various **encryption techniques, authentication**, and **authorization mechanisms** were analyzed to determine the most effective approach to ensuring network security. After designing the WLAN security concept, a **pilot project** was carried out at a selected establishment, where the solution was implemented and thoroughly tested through **performance evaluations.**

Python Programming

Python

FastAPI

Pydantic

Typer

TypeScript Programming

TypeScript

NodeJS

fastify

Angular

IT-Sec

Network Analysis

Cryptography

Protocol Security

Master Thesis – Analysis, Implementation and Optimization of an End-2-End Security Concept for the Internet of Things in an Industry 4.0 Scenario

This thesis tackles the challenge of securing communication for Industry 4.0 environments, where devices often communicate over insecure channels like cellular radio. While current solutions use transport layer encryption, they lack end-to-end security across untrusted hosts.

The project evaluated end-to-end encryption for constrained IoT devices using protocols like CoAP, MQTT, and WebSocket, demonstrated on Intel's Quark™ SE Microcontroller. Results showed effective end-to-end encryption without major impact on protocol performance, though scalability issues arose with high participant counts.