Finn Köhler

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Education

University of Münster — Münster, Germany
Master of Science in Information Systems (Major in Data Science) — *Oct. 2025 – Sept. 2027*
- Focus/Interest Areas: Machine Learning for autonomous systems.

Bielefeld University of Applied Sciences (HSBI) — Bielefeld, Germany
Bachelor of Engineering in Digital Technologies (Dual-Study Program) — *Aug. 2020 – Feb. 2024*
- Academic Standing: 1,8 (German Scale; US GPA equivalent ≈ 3.5). Bachelor Thesis: 1,3 (German Scale; US GPA equivalent ≈ 3.8).
- Dual-Study: Completed a highly practical program integrating 3.5 years of industrial software development with theoretical depth.

Experience

Software Engineer (Working Student) — Oct. 2025 – Present
Beckhoff Automation GmbH & Co. KG (TwinCAT Analytics) — *Verl, Germany*
- Architecting high-performance, real-time analytics engines for industrial applications.
- Engineering a TwinCAT Watchlist, a monitoring interface for real-time PLCs, ensuring millisecond data synchronization.
- Optimizing C# codebases to ensure deterministic execution within low-latency automation environments.

Full-time Software Engineer — Feb. 2024 – Oct. 2025
Beckhoff Automation GmbH & Co. KG (TwinCAT Analytics) — *Verl, Germany*
- Developed and extended an automated visualization framework that auto-generates data dashboards based on TwinCAT Analytics configurations, reducing setup time for customers by 70%.
- Engineered customer-facing modules for the TwinCAT ecosystem, focusing on high-availability data processing.
- Received "Exemplary" performance evaluation (Arbeitszeugnis) for 5 years of consistent technical and social excellence.
- Sabbatical (Aug.–Dec. 2024): Conducted an independent cultural exchange in Spain, demonstrating adaptability and international communication skills.

Dual-Study Research & Software Engineer — Aug. 2020 – Feb. 2024
Beckhoff Automation GmbH & Co. KG (TwinCAT Analytics) — *Verl, Germany*
- Bachelor Thesis (German Grade: 1,3; US GPA equivalent ≈ 3.8): "Automated Integration of Analytics Dashboards into Existing Industrial Visualizations."
- Architected a synchronization framework to unify disparate operating concepts between legacy visualizations and the TwinCAT Analytics Dashboard.
- Developed and benchmarked a prototype implementation that demonstrated a 300% increase in deployment speed compared to manual integration methods.
- Designed and implemented the automated generation of a User Management configuration within TwinCAT HMI to facilitate secure access to serverside data in industrial scale systems.
- Programmed kernel-mode drivers and industrial IoT pipelines, managing 3,000+ hours of applied engineering.

Selected Projects

Dartz (Full-Stack Real-Time Platform) | *React, PostgreSQL, Firebase* — 2024 – Present
- Architected a multiplayer scorekeeping platform utilizing Firebase for real-time state synchronization across remote clients.
- Implemented game logic for "501" rules, featuring live matches with remote and local players, 3D-Models and (soon) player performance analytics.
- **Live demo**

Robotics club & Automated Pathfinding — 2018 – 2020
- Engineered an autonomous robot capable of real-time pathfinding and object targeting using remote control and onboard logic.
- Organized STEM hands-ons for interested students in local schools.

Technical Skills & Leadership

Languages: C# (Advanced), Python (PyTorch, Scikit-learn, pandas, ...), C/C++, TypeScript (Native, React), SQL, German (Native), English (TOEFL iBT : 117/120), Spanish (Basic)
Automation/Robotics: TwinCAT Analytics, TwinCAT PLC (IEC 61131-3), TwinCAT HMI, Kernel-level Dev, IoT Pipelines
Tools: Git, Docker, Firebase, Adobe Premiere Pro, After Effects
Leadership: Handball Team Captain; Elected Member of Computer Science Student Council