

# Finn Köhler

Münster, Germany | [finn.koehler@uni-muenster.de](mailto:finn.koehler@uni-muenster.de) | [linkedin.com/in/finn-köhler-a916983a6](https://linkedin.com/in/finn-köhler-a916983a6)  
[github.com/xtazah](https://github.com/xtazah) | [finn-koehler.com](https://finn-koehler.com)

## EDUCATION

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### University of California, Berkeley

San Francisco, California, USA

*Graduate Student - Computer Science (Study Abroad Semester)*

*Aug. 2026 – Jan. 2027*

- Coursework: Algorithmic Human-Robot Interaction (CS 287H), Embedded Systems (CS C249A), Introduction to Robotics (EECS 206A), Natural Language Processing (EECS 283A), Evidence and Uncertainty (DATA 145).
- Focus Areas: Robotics, real-time control systems, and machine learning for handling real-world data.

### 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  $\approx 3.5$ ). Bachelor Thesis: 1,3 (German Scale; US GPA equivalent  $\approx 3.8$ ).
- Dual-Study: Completed a highly practical program integrating 3.5 years of industrial software development with theoretical depth.

## EXPERIENCE

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### Software Engineer (Working Student)

Oct. 2025 – Sep. 2027

*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  $\approx 3.8$ ): "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

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- 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

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**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