Jonathan Wrede

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EDUCATION

- **TU Dortmund** — Germany, Dortmund
  Bachelor Computer Science with Minor Statistics — *Oct. 2019 – Apr. 2023*

- **University of Muenster** — Germany, Muenster
  Master Computer Science Focus AI / ML / Statistics — *Oct. 2023 – Oct. 2026*

EXPERIENCE

- **Vilisto** — Germany, Hamburg
  Machine Learning Engineer — *Jan. 2025 – Present*
  - **Battery health & runtime prediction**: Built a monthly evaluation/data pipeline for predicting battery capacity and runtime for IoT thermostats in buildings; unified production telemetry from multiple sources, produced versioned datasets, orchestrated with **Dagster**, and tracked experiments in **MLflow**.
  - **Company data platform (ELT)**: Hardened the internal warehouse for analytics/ML: PII-safe ingest, **dbt** models/tests/lineage, scheduled via **Dagster**, staged rollouts with ArgoCD, enabling consistent dashboards and models.
  - **Fleet monitoring**: Created **Grafana** dashboards/alerts to detect offline or abnormal thermostats and data-quality issues, reducing time-to-detect field incidents.
  - **Platform & tools**: Owned deploy/monitoring of data/ML services on **Kubernetes** (**Helm**, probes, logs/metrics) and shipped a lab **FastAPI**+dashboard app to visualize battery tests and auto-alert when rigs stop reporting.

- **Saracus** — Germany, Muenster
  Big Data Consultant — *Jan. 2023 – Dec. 2024*
  - **Cloud data platforms**: Designed and implemented scalable data warehouses on **Snowflake (AWS)**, **Google BigQuery**, and **Azure Synapse**; developed automated **Python** ETL pipelines and reporting solutions.
  - **Application development**: Built multiple **Streamlit** applications with OAuth SSO, Snowflake integration, and custom visualization layers; deployed via **Azure Container Apps** and **Azure Storage**.
  - **Data governance**: Implemented a **Master Data Management** solution using **Ataccama + Azure**; automated glossary maintenance with **Azure Functions** and Python scripts.
  - **Knowledge sharing**: Conducted technical interviews and authored blog articles on cloud analytics and Streamlit.

- **Vilisto** — Germany, Hamburg
  Working Student — Data Scientist — *Sep. 2021 – Oct. 2022*
  - **Machine learning models**: Extended and maintained presence-detection and energy-optimization models using **Python** and **scikit-learn**, improving accuracy and enabling automated heating control across thousands of IoT thermostats.
  - **Data engineering and analytics**: Developed and optimized database schemas and pipelines in **PostgreSQL/TimescaleDB**; performed in-depth analyses using **SQL**, **pandas**, and **matplotlib** to improve device performance and data quality.
  - **Software development**: Contributed to both backend (**Python, REST APIs, Docker**) and frontend (**TypeScript, Vue.js**) systems for data visualization and operational tooling.
  - **Independent projects**: Planned and implemented a **PyQt** labeling tool for time-event detection and led internal programming workshops.

- **TU Dortmund** — Germany, Dortmund
  Teaching Assistant — Data Structures & Algorithms — *Feb. 2021 – Oct. 2021*
  - **Instruction**: Authored/graded programming assignments & staffed help hours for algorithms, data structures, and programming.

PROJECT EXAMPLES

- **Anki Markdown Extension**: Adds Markdown rendering with live preview to Anki. **Tech:** JavaScript, Python, GitHub Actions

PROGRAMMING SKILLS

- **Languages**: Python, SQL, JavaScript, Java

- **ML & Data Science**: LLMs, Time-series Modeling, scikit-learn, PyTorch, Pandas / Polars, dbt, MLflow, Grafana

- **Data Engineering**: PostgreSQL / TimescaleDB, Snowflake, BigQuery, Azure Synapse, Ataccama, MinIO

- **Infrastructure**: Dagster, Docker, Kubernetes, Helm, Terraform, GitHub Actions, ArgoCD, Prometheus

- **Application Development**: FastAPI, Streamlit, Vue.js, REST APIs

- **Cloud Platforms**: AWS, Azure, GCP