

Caspar Emanuel Fritzen

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WORK EXPERIENCE

- Jan 2025 - now **Computer Vision Engineering Intern @ DataLab - at Tesla Gigafactory Berlin-Brandenburg**
- Building factory AI systems for automating die-cast machine (Gigacastings) defect detection.
- Mar 2024- Dec 2024 **Data and Automation Engineering Intern Paint - at Tesla Gigafactory Berlin-Brandenburg**
- Automated maintenance workflows in the paint shop by programmatically updating BOMs and progressing systems toward a digital twin.
 - Collaborated with cross-functional teams to integrate AI-driven translations, PLC alarms, and develop LLM-powered tools and dashboards linking ERP and CMMS.
 - Initiated a factory computer vision system (from hardware to software, E2E) with real-time and data / inferencing pipelines to detect paint defects, supporting immediate on-line fixes.
- Oct 2023- now **Software Engineer - at Friedl & Company a TUM spinoff company**
- Further refinement and buildout of the thesis project: Full stack development of the web analytics platform for an ecolabel with the biggest German insurer, including Stripe payments integration. Full DevOps and CICD responsibilities
- Feb 2022- Feb 2024 **Junior Engineer - at TIDEFI / tidepay- from DEX to RWA tokenization**
- Developed a sophisticated NodeJS Discord bot for community growth
 - Guided the pivot to tidepay, a RWA tokenisation company and spearheaded AI/LLM efforts
- Nov 2021 **Web-development for Hansons Robotics Hong Kong SAR- SophiaDAO NFT marketplace**
- short-term sprint-based web development sessions to create a website + marketplace for the SophiaDAO intended for the sale of hundreds of NFTs created by the humanoid robot "Sophia"
- 2021- 2024 **Software Engineer + technical advisor for loyal - app / web / infrastructure development**
- consultation for cloud architecture, native iOS and Android apps, backend / dashboard for clients (see loyal-app.de for reference) - loyal systems innovation GmbH Hamburg
- Oct 2018 **Internship at Aerius GmbH HVAC systems for marine vessels in Saint Nazaire, France**
- planning and installing of hvac systems in multiple cruise vessels by royal caribbean cruises ltd. at the Saint Nazaire port in France

EDUCATION

- 2020 - 2023 **Technical University of Munich** Master of Science - Management & Technology
- 50 / 50 computer science major and energy markets business specialization
 - Thesis (1.0) dev a full-stack web analytics platform for an ecolabel w/ major German insurer
- 2017 - 2020 **Technical University of Munich** Bachelor of Science - Management & Technology
- Project studies on web-development (PHP, SQL, JS, HTML) and databases
 - Completed EIDI (top 10% of class) and PGDP with 2.0 and 2.3 respectively (Java)
 - Thesis on statistical analysis for a startup (algorithms implemented in R / Python)
- 2016 - 2017 **Technical University of Munich** Studium Naturale/Generale
- MINT Semester for orientation in the science fields.
- 2015 - 2016 **Bundeswehr Gebirgsjäger FWDL** voluntary army service as a Mountaineer in Mittenwald, Germany
- Completed year with the rank "Hauptgefreiter Gebirgsjäger"
- 2013 - 2015 **Ellesmere College** International Baccalaureate (IB) in Ellesmere, Shropshire, UK
- Graduated with 35 IB points, top 3 of the year equivalent to 1.9 (German Abitur grade)

PROGRAMMING EXPERTISE

Sep 2021- Dec 2021	Internship at Playasia in Hong Kong SAR– web / backend development <ul style="list-style-type: none">• Implemented, customized, and deployed an email marketing system using PHP and Laravel.• Developed a custom library to integrate the system into the Playasia backend.
Oct 2019- Jan 2020	Project studies at ALFASOLUTIONS in Linz, Austria (three-month fulltime) <ul style="list-style-type: none">• Implementation of a web-based accounting system for a client• Delivered a fully-fledged internal social and accounting platform
2018- 2019	Practical course in the foundations of programming (one semester, java) <ul style="list-style-type: none">• Developed a Java-based search engine using Google's PageRank algorithm, demonstrating proficiency in algorithms and data structures.

SKILLS & INTERESTS

language	German – C2, English – C2
tech	Python, YOLO, OpenAI API, LangChain, ML, JavaScript, TypeScript, NextJS, NodeJS, REST, Django, Docker, SQL, Java, PHP, Laravel, CI/CD, QA, Git, GitHub Actions, Linux, SSH, HPC, Google Cloud / AWS, Jira, Scrum, Agile Development
interest	LLMs, RAG, Agents, DAG, Blockchain, renewable energy, architecture, economics, EVs, energy storage, business development, project management, real-estate tennis, mountaineering, mountain-biking, swimming, fitness, skiing, photography