Jonathan Tybirk

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Profile

I'm a BSc Artificial Intelligence and Data student at DTU focused on applied AI and software engineering. I've built and deployed AI systems, enterprise applications, and embedded software across academic, industry, and rocketry contexts.

At the Danish Student Association for Rocketry, I combine technical development with organizational leadership as Treasurer and Board Member. I'm driven by ambitious, collaborative projects that demand technical depth and have real-world impact.

Education

BSc Artificial Intelligence and Data, Technical University of Denmark
September 2023 – present
- **GPA: 10.8**
- 1st place finisher in the 2025 Danish National Student Championship in AI
- 2025 Summer exchange at Nanyang Technological University, Singapore

Experience

Student Software Developer (Analyst), Netcompany
May 2025 – present
- Building full-stack features for the new NemKonto for Digitaliseringsstyrelsen with a **Java** backend and **React** frontend
- Integrating **XSD/XML** interfaces with external companies
- Designing, implementing, testing, and reviewing features across the stack

Mission Control Developer, Danish Student Association for Rocketry
September 2024 – present
- Implemented a **TCP** protocol for real-time communication and redesigned the Mission Control logging system in **C#**
- Developing reliable **embedded C++** software for the rocket Flight Computer

Teaching Assistant, Technical University of Denmark
January 2024 – May 2025
- Taught 120 students *Computer Programming* as Assistant Lecturer
- Supervised students on deep reinforcement learning, convolutional neural networks, and latent text embeddings

Projects

Medical Statement Classification System   (~ 40 hours)
August 2025
- Built a medical statement classifier for *DM in AI 2025*, achieving the highest accuracy in the competition under strict runtime and memory constraints.
- Applied retrieval augmentation with **Okapi BM25** and a **local LLM**, tuned using **Bayesian optimization**

Instrument Classifier with Cloud Deployment   (~ 60 hours)
January 2025
- Built an audio-classification model in **PyTorch** with reproducible data pipelines and containerized training and inference using **Docker**
- Implemented **data version control** and **artifact management** on **Google Cloud**

Technical skills
Python / PyTorch
TypeScript, Node.js, React
Java / Spring Boot
C# / .NET
C++ / STM32
SQL / PostgreSQL
Git, Docker, GitHub Actions
Azure, Google Cloud

Languages
Danish, native
English, fluent
Spanish, basic

Additional qualifications
- Chairman of the student council for 250 students at *Gymnastikhøjskolen i Ollerup*. I improved efficiency by delegating responsibilities to small task groups.

- Certified personal trainer, having worked with regular people to promote health and an optimistic outlook through exercise and nutrition.

- Cultural insight from solo-backpacking many times across Europe. I like working with international and diverse groups of people.

- 4-month army enlistment on Bornholm. This taught me to teamwork effectively even under stressful conditions.

- Experience performing music as guitarist and front singer - this has helped me get over a fear of public speaking.

- Great joke-teller according to my programming students!