Jonathan Tybirk

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Profile

I am a BSc Artificial Intelligence and Data student at DTU, eager to grow both personally and technically as part of a talented team. My experience spans full-stack development, AI-driven automation, and improving software reliability. I have built a dynamic portfolio website using React and PostgreSQL, enhanced safety in a rocketry Mission Control System by refactoring a .NET C# codebase, and developed a self-operating computer prototype using GPT-4V with LangChain.

Teaching Python to 120 students and leading a student council of 250 peers has sharpened my communication and leadership skills. My adaptability and eagerness to learn enable me to thrive in fast-paced, collaborative environments. I am excited to bring my technical expertise, creativity, and teamwork to Microsoft's mission of empowering every person and organization to achieve more.

Education

BSc Artificial Intelligence and Data student, Technical University of Denmark
September 2023 - current
- **GPA: 11.1 / 12**
- Taking extended courses in **Algorithms** and **Machine Learning**
- 6th-place finisher in the *Danish National Championship in AI 2024* under team name *Powered by SmartFridge*

Experience

Mission Control Developer, Danish Student Association for Rocketry
September 2024 - current
- Implementing **unit testing** and **logging** in a large **C# codebase** in a team
- Refactoring old code to be safe and maintainable, using appropriate **design patterns**

Student Assistant, Copenhagen Applied Research A/S
April 2024 - current
- Implementing **Python automation scripts** for data collection and processing

Teaching Assistant, Technical University of Denmark
January 2024 - current
- Teaching 120 students *Computer Programming* as Assistant Lecturer
- Helped convert the *Statistics* course textbook and exercises from **R** to **Python**

Projects

Full-Stack Website (React, TypeScript, CSS, PostgreSQL)
July 2024 - current
- A dynamic self-deployed website to show off my projects
- Integrated **frontend** and **database** through **Node.js** with appropriate **code structure**

Modelling of Membrane Degradation (NumPy, pandas, SciPy, scikit-learn)
March 2024 - May 2024
- Paid contract work to data model for *Aprisium Pte. Ltd.*, a Singapore-based environmental services start-up
- Extensive **code documentation** and **data visualizations** (**Matplotlib**)

Self-Operating Computer (LangChain, OpenAI API)
February 2024 - May 2024
- Program to visually perceive a computer screen, and navigate using mouse, keyboard, and **GPT-4V** reasoning
- Built with **Python** with robotic process automation start-up *Symbolik.ai*

Technical skills
Python / PyTorch / LangChain
C# / .NET
TypeScript, React, HTML, CSS
SQL / PostgreSQL
Git, Markdown
Azura, Google Cloud

Languages
Danish, native
English, fluent
Spanish, beginner
German, beginner

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 through exercise and nutrition without toxic self-criticism.

- 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!