RUBEN AHRENS, MSC

Master in Computer Science and Artificial Intelligence

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STRENGTHS

Python | PyTorch | TensorFlow | Data Mining | Reinforcement Learning | Computer Vision | Deep Learning | Hyperparameter Optimization | Fine-tuning Transformer Models | Big Data | Web Scraping | NLP | Data Visualization | Geospatial Machine Learning | FastAPI

REFERENCES

Leiden University | TNO
corveenman

MKC Moto
alain-carree-0a84a5160

Grand Cafe de Parel
jeffrey-alberts-b07181207

LEARNING

Model Deployment | RAG | Italian

LANGUAGES

Dutch: Native
English: Fluent
German: B2
Italian: A2

MOST PROUD OF

Maintaining a healthy lifestyle.
Getting proper sleep, nutrition and exercise

My thesis
Through persistence I was able to finish a big complex project.

ABOUT ME

Success is not the absence of failure; it's the persistence through failure.

I started studying Artificial Intelligence at the University of Amsterdam after graduating high school. Once I finished the program, I was curious to learn more and become better at machine learning. This is why I continued my education at Leiden University receiving a master's in Computer Science with a specialization in AI. Towards the end of my master's, everything came together in my thesis where I used machine learning to discover the value of sulfur dioxide and formaldehyde satellite data in detecting ship exhaust plumes.

My career goal is to work towards the role of a senior data scientist. I am most passionate about working in teams, collaborating, and working on tackling systemic issues in society. This was one of the reasons for choosing my thesis topic.

In group work, my organizational skills stand out. I took the initiative in organizing code repositories, documents, and tracking progress. By having an overview and knowledge of technical information, I contributed to algorithm design by identifying bugs in code.

EDUCATION

Sep 2022 – Jun 2024 **MSc Computer Science (AI track)**
Universiteit Leiden

The master computer science I gained expertise in deep learning, data science, natural language processing, and more.

Sep 2018 – Jan 2022 **BSc Artificial Intelligence**
Universiteit van Amsterdam

From the bachelor AI I got acquainted with basic machine learning techniques, laying the foundation for my master's.

EXPERIENCE

Feb 2025 – Present **Coding Expert For AI Training**
Outlier | Remote

To keep my coding skills sharp, I took a freelance opportunity at Outlier to train an in-development Large Language Model (LLM) with Python code.

May 2023 – Present **Sales Expert**
MKC Moto | Hazerswoude-Rijndijk, The Netherlands

During my master's I had a side job at a motorcycle clothing store. Through this job, I improved my communication skills, learned various selling techniques, and met people sharing a passion for riding motorcycles. While searching for an AI-job, i'm still working in this position.

May 2022 – Sep 2022 **Bartender**
Grand Cafe de Parel | Leimuiderbrug, The Netherlands

Feb 2021 – Mar 2022 **Hiker**
EasyWay

HOBBIES AND INTERESTS

- Fitness
- Reading
- Artificial Intelligence
- Motorcycling
- Urban planning

PROJECTS

Jan 2024 – Jan 2025 **Detecting ship plumes using satellite data**

Msc Thesis | | |

Computer Vision | Big Data | Hyperparameter Optimization | Geospatial Machine Learning

Earth observation helps monitor shipping emissions. This study uses machine learning to improve ship plume detection by incorporating SO_2 and HCHO alongside NO_2 from TROPOMI data. An XGBoost classifier trained on 80x80 km samples shows that adding SO_2 and HCHO enhances detection, especially at extreme NO_x proxy values. Individually, SO_2 and HCHO achieved ROC AUCs of 0.647 and 0.634, compared to 0.684 for NO_2, highlighting their potential despite room for improvement with more data.

May 2024 – Jun 2024 **Resistance training optimization**

Course paper | | |

Web Scraping | Data mining

In this course paper for the course "Sports Data Science", I combined my passion for bodybuilding and AI. I explored training data from 60 people, creating an algorithm that translates weightlifting performance across exercises.

Nov 2023 – Jan 2024 **Recognizing drug side-effects from text**

Course paper | | |

TensorFlow | Natural Language Processing | Fine-tuning Transformer Models | Deep Learning

Through fine-tuning on the CADEC dataset, consisting of medical reviews, the transformer network BioBERT, specialized in biomedical texts, demonstrates high performance in recognizing medical entities.

May 2023 – Jun 2023 **Optimizing container placement for a cargo ship**

Course paper | | |

Data Visualization

In this project, my peers and I used a genetic algorithm to optimize the container placement on a cargo ship that had a route passing multiple harbors. The placement was meant to minimize unloading time and the distance between the center of gravity of the ship and the load.

Oct 2022 – Jan 2023 **Predicting crime in Chicago neighborhoods**

Course paper | | |

Data visualization | Deep Learning | TensorFlow | Computer Vision

This is the first big project where I worked with spatiotemporal data. Me and my partner divided the map of Chicago, Illinois into grid cells, creating a sparse 50x55px image. Using an ensemble of ConvLSTM models, we were able to generate an accurate estimation of high-crime locations, accounting for high differences in data for different regions.

Apr 2021 – Jun 2022 **Interactively classifying visual art**

BSc Thesis | | |

Computer Vision | Fine-tuning Transformer Models | PyTorch

My bachelor thesis was my first big AI project. In this project, I used the deep learning model CLIP to classify paintings into portrait or landscape classes. I investigated the usefulness of interactive machine learning (where an algorithm is trained during the data annotation process). I created a GUI application to annotate the images.

Dec 2020 – Jan 2021 **Free the Sea VR Game**

Course project | | |

Game Development | C++

For a course at the University in Amsterdam, I collaborated to create an educational VR game. In "Free the Sea" a player is tasked with collecting plastic waste in the sea. The purpose of the game is to raise awareness about recycling among children.