Thijn Bakker

Data Science & Artifical Intelligence Student

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About Me

Data Science & AI student passionate about applying machine learning to solve real-world challenges. Skilled in Python, MLOps, and computer vision, with hands-on experience deploying ML models into production environments. Motivated, detail-oriented, and eager to contribute to innovative AI projects.

Technical Skills

- **Programming & Data Science:** Python (NumPy, Pandas, Matplotlib, Scikit-learn), SQL, Power BI, Streamlit
- **Machine Learning & AI:** Deep Learning (CNN, RNN, LSTM), Transformers (BERT, RoBERTa), NLP, Computer Vision (OpenCV, segmentation, detection), Time Series, RL, XAI
- **MLOps & Deployment:** Azure ML, CI/CD (GitHub Actions, Azure Pipelines), Docker, Portainer, Model Versioning, Python Packaging (PyPI, Sphinx)
- **Software & Tools:** Git/GitHub, Kaggle, Figma (UI/UX), Opentrons OT-2
- **Project & Research:** Agile (Scrum/Kanban), Research Writing, Stakeholder Presentations
- **AI Ethics & Compliance:** Responsible AI, GDPR, EU AI Act

Language

- **Dutch** (Native)
- **English** (Professional working proficiency)
- **German** (Limited working proficiency)

Education

BREDA UNIVERSITY OF APPLIED SCIENCES (BUAS)

BSc in Applied Data Science & AI

Expected Graduation: 2027

- Achieved propaedeutic certificate with distinction in July 2024 (GPA: 4.0 / Judicium: 9.5)
- Focus on AI, machine learning, robotics, and data science.
- Completed Year 1 projects with top marks (9.0–10.0)

MGR. FRENCKEN COLLEGE

Hoger Algemeen Voortgezet Onderwijs (HAVO)

Graduation Date: 2023

- Completed a 5-year secondary education program with a focus on general academic subjects.
- Gained foundational experience in web development, including PHP, CSS, and HTML5.

Experience

BARTENDER & SERVER (FRONT OF HOUSE)

Eetbar Marktzicht

Jun 2023 - Present

- Delivered excellent customer service in a fast-paced, high-pressure environment.
- Collaborated in a team to handle large volumes of orders efficiently and accurately.
- Strengthened communication, multitasking, and problem-solving skills while ensuring customer satisfaction.

Certifications

- Cambridge English Advanced (FCE, B2 Level) – Cambridge Assessment English, 2021
- EU Driver's Licence (Category B)

General Interests

- Fitness & strength training, music, field hockey, social activities.

Projects

DEPLOYING AUTOMATED PLANT ROOT ANALYSIS TO THE CLOUD (MAY – JUN 2025)

Breda University of Applied Sciences · with NPEC (Netherlands Plant Eco-phenotyping Centre)

Transformed a proof-of-concept computer vision pipeline into a production-ready cloud ML application for plant root segmentation, landmark detection, and robotic inoculation.

- Packaged modular Python library (PyPI) with CLI & API; documented using Sphinx.
- Designed MLOps pipelines on Azure: automated training/retraining, model versioning, CI/CD deployment.
- Built Streamlit app for researchers to upload images, visualize masks/landmarks, and download results.
- Containerized inference services via Azure & Portainer, ensuring scalability & cost efficiency.
- Delivered live demo to NPEC stakeholders.

AUTOMATING PLANT ROOT ANALYSIS & PRECISION INOCULATION (NOV 2024 – JAN 2025)

Breda University of Applied Sciences · with NPEC

Developed a computer vision & robotics pipeline for plant phenotyping.

- Built segmentation model for plant roots and robotic liquid handling automation.
- Applied reinforcement learning (RL) for precision inoculation control.
- Delivered a functional AI-robotics solution for plant science competition.

EMOTION CLASSIFICATION FROM VIDEO DIALOGUE USING NLP & TRANSFORMERS (FEB – APR 2025)

Breda University of Applied Sciences · with CIA (Content Intelligence Agency)

Created a full NLP pipeline for sentence-level emotion recognition from German video dialogue.

- Combined transcription, translation, embedding, and classification into one system.
- Used RoBERTa, BERT, LSTM, TF-IDF, with explainability (XAI) and HuggingFace integration.
- Delivered a working pipeline for real-world content intelligence.

ENHANCING ROAD SAFETY WITH AI-DRIVEN DRIVING BEHAVIOR ANALYSIS (MAY – JUN 2024)

Breda University of Applied Sciences · with ANWB (Algemene Nederlandse Wielrijdersbond)

Built ML models analyzing telematics data (braking, speed patterns) to improve road safety.

- Designed MLOps pipelines, conducted time-series analysis, and applied Responsible AI.

AI-POWERED TRAFFIC SIGN DETECTION FOR SMARTER DRIVING (FEB – APR 2024)

Breda University of Applied Sciences

Implemented real-time traffic sign detection using deep learning.

- Designed interactive Figma interface for safer driver assistance.
- Integrated fairness practices for robust AI performance.