

# JULIEN MARTEEN AKAY

## Data Science in Industry & Deep Learning in Research

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## EXPERIENCE

### Data Science Consultant

#### Ailio GmbH

📅 Nov 2020 – Ongoing

📍 Bielefeld

- Lead and finished projects on my own while being a full-time student and having another part-time job in research.
- Latest project: Implemented an OCR&NLP-pipeline to extract visual text from videos into a custom JSON schema for the German Broadcasting Archive.
- Others: Machine Learning based counting of sewing processes using audio and vibration data. Prediction of repair measures for defective building technology products and subsequent cost estimation for repairs through machine learning.

### Graduate Research Assistant

#### University of Applied Sciences and Arts Bielefeld (HSBI)

📅 Sep 2023 – Ongoing

📍 Bielefeld

- Worked (contributing and implementing own ideas) at the Center for Applied Data Science (CfADS) on AI in Healthcare.
- Achieved State-of-the-Art performance in wound image classification, surpassing competitors by a significant margin. Details will be disclosed in an upcoming paper and are currently confidential.

### Graduate Research Assistant

#### University of Applied Sciences and Arts Bielefeld (HSBI)

📅 Mar 2022 – Jul 2022

📍 Bielefeld

- Worked (contributing and implementing own ideas) at the Center for Applied Data Science (CfADS) on denoising Super-Resolution Structured Illumination Microscopy (SR-SIM) images using generative AI.
- Implemented Latent-Variable Energy-Based Models (LV-EBM), Joint-Embedding Predictive Architectures (JEPA) and Generative Adversarial Networks (GAN).
- Demonstrated strong performance in denoising high-resolution SR-SIM images. Details will be disclosed in an upcoming paper and are currently confidential.

## TALKS

### Artificial Intelligence Center Hamburg (ARIC) [🔗](#)

- Non-Contrastive Self-Supervised Learning with VICReg [🔗](#)
- Latent-Variable Energy-Based Models (LV-EBM) [🔗](#)

### KI @ HSBI Kongress (English: AI @ HSBI Congress) [🔗](#)

- AI in Healthcare

## EDUCATION

### M.Sc. Research Master Data Science

#### University of Applied Sciences and Arts Bielefeld (HSBI)

📅 Sept 2021 – Mar 2023

Project over two years: Assistance in Wound Care through Artificial Intelligence for Wound Analysis, Assessment, and Treatment. [🔗](#)  
Thesis title: Non-Contrastive Self-Supervised Learning: A Path To Enhanced Wound Image Recognition

### B.Eng. Mechanical Engineering

#### University of Applied Sciences and Arts Bielefeld (HSBI)

📅 Sept 2016 – Sep 2021

Programmed as a hobby in 2018 and wanted to focus on AI, hence I took additional courses and passed the exams in:

- Machine Learning and Data Mining
- Algorithms and Data Structures

Thesis title: Feature Learning on Audio Signals using Convolutional Neural Networks.

## SKILLS

Programming: Python Jax

Tools: PyTorch Lightning TensorFlow

Scikit-Learn Numpy Pandas

Docker Flask Git

Other: Driving license

## LANGUAGES

German (native) ● ● ● ● ●

Aramaic (native) ● ● ● ● ●

English ● ● ● ● ●

## RESEARCH INTERESTS

I want to develop human-level AI and my current plan is to implement Objective-Driven AI (ODAI). [🔗](#)