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Pepijn van Wijk

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EDUCATION

Master Machine Learning

2024 - 2027 (predicted)

University of Amsterdam

The Machine Learning master at the UvA normally takes two years, however I decided to take my time and do it in three years in order to do some semi-long-term traveling in between.

GPA (current): 8.1 / 10 (Cum laude)

Minor electrical engineering

2023 - 2024

Korea University

At the UvA I got the chance to take a minor at Korea University in Seoul, South Korea. The majority of my courses were in the electrical engineering field: 'Asic Design', 'Introduction to Electrical Engineering', 'Electronic Circuits' and 'General Robotics'. Besides these technical courses I also took an 'Understanding East Asian Civilization' course in order to fulfill my historical and anthropological interests.

GPA: 9.3 / 10 (Cum laude)

bachelor computer science

2021 - 2024

University of Amsterdam

My bachelor thesis 'AI-Driven Retrieval and Analysis of Videotaped Council Meeting Archives using Automatic Speech Recognition, Speaker Identification, and Retrieval Augmented Generation' got accepted for publication & demo presentation at ECIR 2025 in Lucca, Italy (Link)

GPA: 8.2 / 10 (Cum laude)

CalandLyceum VWO Technasium

2013 - 2019

 $CalandLyceum\ Amsterdam$

N&T profile, more focus on applied sciences such as chemistry and physics. In addition to this I took a six year long Technasium course. In Technasium you perform three projects per year for different companies and government agencies such as Yakult, Intralox, Artis and Gemeente Amsterdam. During these projects you learn leadership, co-operating, designing, researching, and much more.

Work experience

Full stack developer

Kexxu Robotics

 $\max 2023$ - present

Amsterdam

• Worked on an AI pick and place robot used in cup cleaning factories. My main responsibilities were the programming of the delta robot system and creating the AI vision system which commands the robot.

- Architect of a multi modal data lake system system for the Kexxu Cloud Editor. Easily scalable, this data lake supports (semantic) similarity search of entire videos, documents, faces and more. Used by, among others, podcasters, documentary makers and charities.
- Lead developer of WallEye, an AI edge device utilizing heat cameras and object detection to count people passing by. WallEye has been in use in multiple countries across various branches of a marketing company.
- Infrastructure improvements & maintenance of the online editor app

Freelancer okt 2021 - mar 2023

Temper & independent Amsterdam

• Diverse jobs at different companies from retail to coding/website building.

- Learning quickly; Independence.
- Comfortable in different environments.

Technical specialist customer service

sep 2019 - mar 2020 & aug 2020 - jun 2021 Amsterdam

Nutsgroep

• Started off as a customer service agent in the telecom sector solving TV, Phone & internet problems.

- Later became technical specialist for defect phone lines, responsible for direct contact with supplier & backoffice tasks.
- Customer service; Leadership; Co-operating.

IT support jan 2019 - jun 2019

Uw computer student

Amsterdam

- Solving computer- and related IT problems for customers at home.
- Problem analysis; Planning.

PROJECTS

Chess engine using decoder-only transformer

2024/2025

- Predicts the win probability from a given chess board and player
- Engine works by a simple min-max algorithm, picking the move that minimizes the opponent's win probability.
- Due to hardware limitations, training & parameter tuning was done on a single RTX-4070ti.
- $\pm 70\%$ top-3 accuracy achieved with a 200.000.000 parameter model.
- Github link

flextok generation model

may 2025

- Implemented the autoregressive generator module described, but not released in, Apple's flektok model.
- Due to hardware limitations, I was not able to fully train the model like described in the paper, as this would require various H100 GPUs.
- Github link

Various model implementations in different frameworks

 $2024/\ 2025$

- Implemented and trained various model architectures and optimizers in Pytorch, MLX and tinygrad ML frameworks from descriptions in their respective papers.
- Google's DeepDream Github link (MLX implementation)
- VQ-VAE Github link (MLX implementation) Github link (tinygrad implementation)
- VQ-VAE2 Github link (MLX implementation) Github link (Torch implementation)
- ADOPT optimizer Github link (MLX implementation)
- Amsgrad optimizer Github link (MLX implementation)

PDFgpt august 2023

- Chat with your PDFs using LLMs.
- This was developed before ChatGPT and other providers allowed this in their apps.
- Github link

Skills

Docker, MQTT, InfluxDB, Grafana, Go, IATEX

Design Adobe Photoshop,

Communication Dutch, English, Spanish (currently learning)

Workplace Working in teams, Working individually, Planning, Problem analysis, Quick learning,

Attention to detail