

Jan Zuiderveld

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EXPERIENCE

Senior Machine Learning Engineer

December 2021 – present

AI Heroes

Amsterdam, NL

- AI Heroes is a company specialised in delivering AI-driven solutions in a wide range of sectors.
- Developing machine learning architectures and applications in NLP and CV domains.

Senior Machine Learning Researcher

January 2021 – September 2021

Amsterdam Machine Learning Lab (AMLab)

Amsterdam, NL

- Researching applications of implicit neural representations in generative networks for audio synthesis, supervised by drs. M. Federici and dr. E. Bekkers.
- Amsterdam Machine Learning Lab (AMLab) conducts research in the area of large scale modelling of complex data sources, directed by M. Welling.

Independent Artist

November 2019 – Present

Warana

Amsterdam, NL

- Motivated by curiosity and fascination for the fast developing field of artificial intelligence, I try to understand and shed light on the profound processes underlying AI methods that are transforming our world by approaching the topic from both a creative- and scientific perspective.

Senior Machine Learning Researcher / Engineer

August 2017 – July 2022

QV Technologies

Amsterdam, NL

- Lead a small team of machine learning researchers and engineers in the development of a dutch speech-to-intent system for an embedded service ordering system.
- Developed modules on top existing state-of-the-art speech recognition models for domain specialisation, outperforming Google/Microsoft STT APIs.
- Nominated for the Horecava Innovation Award 2020.
- Participated in the Demonstrator Lab Incubation program at Vrije Universiteit Amsterdam.

Project Manager & Creative Director

April 2016 – Present

Disco Damsco

Amsterdam, NL

- Disco Damsco is an Amsterdam based Event Organizer. We try to approach clubbing in a personal way: smaller venues with a free atmosphere, focusing on live music, installations, and local upcoming talent. Whenever possible, combined with outstanding dinners.

Electrical & Electronic Engineer

May 2014 – November 2018

Stange Scheepselektro

Amsterdam, NL

- Specializing in inter-electronics communication.
- Troubleshoot, repair and install shipboard electrical and electronic systems.

EDUCATION

MMus - Master of Music, ArtScience

September 2021 – July 2023

Royal Conservatoire The Hague & Royal Academy of Art

GPA: 8.0

- Researching applications of machine learning in art. The output of my artistic practice often features playful interfaces to state-of-the-art generative architectures set in engaging and immersive scenes. With these projects I hope to deliver magical experiences and raise awareness of what machines are currently capable of.

MSc - Master of Science, Artificial Intelligence

September 2018 – July 2021

University of Amsterdam

GPA: 8.5

- Research Master with a strong focus on the theoretical aspects of machine learning and information theory.
- Coursework includes: Machine Learning I, Reinforcement Learning, Computer Vision I & II, Natural Language Processing I & II, Multi-Agent Systems, Information Retrieval, Data Mining Techniques, Evolutionary Computing, Explainable AI
- Thesis: *Representing Audio in a Distribution of Continuous Functions*. Grade: 8.5

Minor, EEE and AI*University of Hong Kong*

December 2017 - May 2018

GPA: 7.5

- Program focused on introducing students to the concepts of electrical and electronic engineering, machine learning and the area where both intersect. Including topics as digital signal processing, embedded system engineering and applied machine learning.

Minor, Artificial Intelligence*University of Amsterdam*

September 2016 - July 2017

GPA: 7.5

- Program introducing students to various aspects of machine learning and programming, including final year BSc Artificial Intelligence courses.

Minor, Physics*University of Amsterdam*

September 2015 - July 2016

GPA: 7.5

- Program consisting of the essentials of the BSc Physics. Covering the following topics: calculus, linear algebra, special theory of relativity, classical Mechanics, thermal physics, quantum physics, programming.
- The minor Physics at UvA was discontinued in September 2016 because of high failure rates.

BSc, Bèta-gamma: Brain and Cognitive Sciences*University of Amsterdam*

September 2014 - July 2017

GPA: 7.5

- Strongly interdisciplinary degree. In the first year students get acquainted with several disciplines including math, physics, statistics, psychology, philosophy. In the second and third year students follow a curated program at another bachelor, combined with projects focused on interdisciplinary work with students doing other programs.
- Thesis: *Regularity and predictability in rhythms: Effects on temporal prediction*. Grade: 8.5

PUBLICATIONS

Style-Content Disentanglement in Language-Image Pretraining Representations for Zero-Shot Sketch-to-Image Synthesis.*J. Zuiderveld*

In this work we propose and validate a framework to leverage language-image pretraining representations for training-free zero-shot sketch-to-image synthesis. Our results demonstrate that this approach is competitive with state-of-the-art instance-level open-domain sketch-to-image models, while only depending on pretrained off-the-shelf models and a fraction of the data.

Arxiv

2022

Towards Lightweight Controllable Audio Synthesis using Conditional Implicit Neural Representations.*J. Zuiderveld, M. Federici, E. J. Bekkers*

In this work we aim to shed light on the potential of Implicit Neural Representations (INRs) for audio synthesis, by framing generative modelling as learning a distribution of continuous functions. We show that small periodic conditional INRs learn faster and generally produce quantitatively better audio reconstructions than transposed convolution based neural networks with equal parameter counts.

NeurIPS - Deep Generative Models and Downstream Applications (Oral)

2021

NeurIPS - Machine Learning for Creativity and Design (Poster)

2021

MIDIialogue

MIDI

ialogue is an interface between visitors and a transformer neural network trained for melody generation and continuation. The interface consists of immaterial, but visible and pluckable strings. Like a virtual harp. The machine listens to visitors' melodic input, produces musical reactions and imposes possible conversation directions accordingly, assuring a harmonious, ever-evolving discourse.

B.I.O.D.I.V.E.R.S., Ruigoord (Amsterdam, NL)	2022
Markt Centraal (Amsterdam, NL)	2022
Amsterdam Dance Event, Garage Noord (Amsterdam, NL)	2022
A Perception of Space and Time, De School (Amsterdam, NL)	2021 - 2022
Traumburg Festival (Dornburg, DE)	2021

Dream Machine

This installation consists of a hacked 00's Xerox photocopier. In front of the Xerox machine is a drawing table with paper and markers, inviting visitors to get creative. To nudge visitors to use the machine, the floor around the machine is filled with drawings and outputs. The machine has a big red button. When pressed, the machine will scan an input drawing, generate an artistic image (painting, 3D render, sculpture, woodcut, etc.) based on the content of the input, and print out the output. Visitors can take their printed AI collaborated artwork home.

De Nieuw, De School (Amsterdam, NL)	2023
BODEGA, ISO amsterdam (Amsterdam, NL)	2022
Royal Academy of Art (The Hague, NL)	2022
A Perception of Space and Time, De School (Amsterdam, NL)	2022