Roland Meertens

About me

I have a passion for Artificial Intelligence and am specialised in robotics projects. I know what is needed to make autonomous robots, and the challenges this comes with. I have set up machine learning projects all the way from sensor selection, data collection and labelling to deploying the model in production. My strong point is deep learning/neural networks.

Besides technical knowledge I have a broad range of management experience, with a strong knowledge of agile techniques. I have extensive experience interviewing people, and enjoy mentoring to both learn more about artificial intelligence and programming. I am searching for a leadership position where I benefit from my technical knowledge.

Work experience

Product Manager @ Annotell
October 2020 - Now

I am responsible for building and executing the product roadmap of the company. We chose a 'come for the annotations, stay for the platform' strategy, where we expanded our portfolio of annotation products (e.g. HD Mapping, 3D per-point semantic segmentation, and multi-lidar labeling) to attract more customers. We also launched products (e.g. data Insights, annotell Select), to accelerate AD and ADAS companies to build a safe perception algorithm, and prove that it is safe enough for a defined ODD to drive in.

I pride myself in pushing for a combination of exploration and execution, and assessing technical feasibility before prioritizing products.

During my time at Annotell the company grew from 20 to 30 engineers, and has a total of 60 employees.

I worked extensively with the sales team to define which products we sell, and communicated with many automotive clients to get a full understanding of their problems, and how our solutions would fit in there.

 Skills: Strategy, Leadership, Data Labeling, Automotive Safety

Machine Learning Engineer @ Autonomous Intelligent Driving / Argo
Januari 2018 - October 2020

Created multiple fast and efficient neural networks for 3D object detection. Algorithms I created were deployed to the car and vital for our object detection stack. I also worked on localisation methods: from feature detection to updating maps. I used Python and TensorFlow to create neural networks, and used C++ to deploy these networks to our embedded platform in the car.

During this period I worked as scrum master leading a team of up to 10 people. I also recruited and interviewed engineers and product owners for the machine learning team. Together with our recruiters I set up multiple workshops to teach engineers to be better at interviewing candidates.

I also worked extensively with other teams inside the company. Together with the sensor team we defined the sensor setup for the autonomous Volkswagen ID Buzz. I worked

Kantstrasse 23 - 80807 Munich
✉ rolandmeertens@gmail.com   ☎ +49 (0)1725731250

tightly with the ML Infrastructure team to create the right tooling to scale our machine learning training on AWS, adapt our labeling processes to collect the right training data, and set up a good labeling specification. With the interpretation and prediction team we looked at ways to use machine learning to predict other actors, and ways in which we could combine detection and prediction.

Skills: Agile leadership techniques, Deep learning, C++, Python, CUDA, TensorFlow, Pytorch, TensorRT, AWS, ROS, (thermal) camera, LiDAR processing, data labelling

Research Engineer @ Infor
September 2016 - December 2017

Changed parts of our (pre)translation software to use neural networks, and worked on automatic post-editing methods. Thanks to my work on estimating translation quality the percentage of usable machine translated sentences that was sent to the translators went from 55% to 76% saving the company a lot of money.

Skills: Deep learning, Python, TensorFlow, vue.js, AWS, NLP

Technical University Delft: Researcher
April 2015 - September 2016

Worked on monocular indoor localisation, and obstacle avoidance using stereo camera's at the Micro Aerial Vehicle Lab. Algorithms were implemented that could do this with small amounts of computing power to keep all computing onboard. I worked both on the software side as on the hardware design side of the AI-powered camera's.

Skills: C, C++, Python, TensorFlow, soldering, sensor interfacing, (stereo)cameras, low-powered efficient computing

Intern @ SpirOps (Paris)
January 2014 - July 2014

Created a dialogue management system for project Romeo (led by Aldebaran, the creator of the Nao and Pepper robots). The goal of the project was building a system that can be used in healthcare to assist elderly people to keep their own lifestyle with little intervention from the outside world.

Skills: Python, C++, NAO robots, NLP

Manager robotics lab @ Radboud University
August 2013 - March 2015

Collaborated with staff members of the Radboud University to start a robotics lab. Here I taught students how to use the robots in the lab by writing tutorials and example programs. It also involves troubleshooting any issues students would have. Robots available in the lab were: a Nao robot, a Parrot Drone, Lego NXT, a Sphero and a Turtlebot.

Skills: C, C++, Python, sensor interfacing, ROS, NXC

Teaching assistant for several courses @ Radboud University

March 2011 - June 2014

Three years for the bachelor course Human-computer interaction (90 students). One year for the bachelor course Research methods (150 students), and one year for the master course Research methods (8 students).

Skills: Java, statistics

EDUCATION

Masters degree Artificial Intelligence
September 2012 - March 2015

At the Radboud University Nijmegen with a specialisation in Cognitive Artificial Intelligence and Brain Computer Interfacing. Title of masters thesis: "A Scalable Mixed Initiative Dialogue Manager".

Bachelor's degree Artificial Intelligence
September 2009 - April 2013

Radboud University Nijmegen. Title of bachelors thesis: "Gesture based flight control".

Passion Projects

Projects at Pinch of Intelligence
August 2014 - current

In 2014 I started the blog Pinch of Intelligence (see `www.pinchofintelligence.com`) and wrote about many machine learning projects I conducted in my spare time. Interesting projects I made are:

- A demonstration to demonstrate how effictive human guidance is for an AI for the game Super Mario Bros (published at the BNAIC conference in 2014)
- A virtual reality 3D visualiser for data: `immersivepoints.com`.
- A music recommender system for people that are learning a foreign language (`http://rmeertens.github.io/duomusico-frontend/`).
- A neural network to create realistic images from gameboy camera images

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Editor at InfoQ.com
June 2017 - current

Wrote multiple news articles, reviewed many external articles with their authors, and organised two editions of the QCon.AI conference in San Francisco. See my work here: `https://www.infoq.com/profile/Roland-Meertens/`.

Editor in chief of De Connectie
November 2012 - August 2015

Magazine for AI students (and others that are interested) made by students from several universities in the Netherlands. The magazine was not released for a long time and together with the new editorial office we made 4 new editions with of 450 per edition. De Connectie is now Turning Magazine `https://www.turningmagazine.com/`.

President of study association CognAC
September 2011 - October 2012

The study association had 160 members and a budget of 3000 euro for activities this year. The goals of having more activities, bigger activities, gathering more sponsorship, and having more study related events for students were all reached during that year.

Organisation of Forceparty
February 2010 - February 2014

Organised LAN-party's with a of visitor count between 90 and 150 people per edition.

Committees at study association "CognAC"
September 2009 - March 2015

Was a member of 8 committees, and was chairman of the study committee, sporting committee, educational paper committee, and the introduction comittee.

Performance in competitions

INDI Robot Games

Built a fighting robot with the purpose to attack other fighting robots (also knows as BattleBots, or RoboWars), which finished 18th out of 21 participants.

Hack the road: second place

We created a green wave algorithm where self-driving cars adjust their speed to catch a green light, and indicate that they are doing this to other road users.

http://www.pinchofintelligence.com/autonomous-green-wave/

Datathon sustainable fishing: first place

Combined known approaches to prevent overfishing with global data to make an interactive tool to determine where to place fishing nurseries.

http://www.pinchofintelligence.com/looking-back-at-my-first-datathon

IROS autonomous drone race: second place

Adjusting shape-fitting algorithms to be able to run with a high frequency on consumer hardware. http://mavlab.tudelft.nl/tu-delft-first-autonomous-drone-race/

Mario AI contest CognAC: first place

Created a reinforcement learning algorithm where Mario could teach itself to play the Super Mario Bros. game. Humans could take over control to allow for faster learning. I turned my entry into a BNAIC 2014 conference demonstration: http://bnaic2014.org/?page_id=154

Talks and conferences

2D3D AI

Hands-on Workshop: Methods for Data Selection in Autonomous Vehicles

QCon Plus 2021

The Unreasonable Effectiveness of Zero Shot Learning

IROS 2020

Keynote: The road towards perception: Methods, challenges, and data required

Meetup at Google

Technologies Paving the Way for Autonomous Driving

QCon London 2019

Q&A about machine learning in practice, and a Q&A about working at InfoQ

QCon AI 2019

Flash talk: the Density Based Clustering algorithm

QCon AI 2018

Flash talk: introduction to neural networks without mathematics

TRADR SIKS summer school

Workshop: deep reinforcement learning