Geoffrey R. van **Driessel**

Software Engineer

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Summary

Recently graduated student looking for a work environment with complex software challenges. Started career with a lot of web development projects, but is deviating toward (and looking for) more complex challenges that require a thoughtful process of designing/developing a solution using complex data structures, algorithms and/or models. Furthermore during my bachelor internship at TNO, I discovered that 1) I really like engineering intelligent autonomous systems (robotics), and 2) I like the research environment. Just finished my master where I dove into topics such as machine learning (mainly focused on CV and NLP, and an in-depth focus on deep reinforcement learning), big data engineering, distributed algorithms, parallel programming and mathematical models.

Education

Vrije Universiteit and Universiteit van Amsterdam (joint degree) — *Amsterdam*

Master Computer Science — *Sept. 2019 - July. 2021*

- 7.8 average

Vrije Universiteit — *Amsterdam*

Pre-master Computer Science — *Febr. 2018 - July. 2018*

- 8.4 average

Amsterdam University of Applied Sciences — *Amsterdam*

B.S. Cumlaude and Excellence in Software Engineering — *Sept. 2015 - July. 2019*

- Excellence minor Software for Science, project: Loadbalancing for CERN
- Excellence minor Research in emerging technology, project: Research effectiveness of posture correction using haptic feedback during exercise

Nova College — *Haarlem*

MBO - ICT Apllication developer — *Sept. 2012 - July. 2015*

Skills

Programming languages and frameworks	Python, Java, C, C++, Javascript(NodeJS, AngularJS, React.js), R, PHP(Laravel) HTML5 and CSS3.
Tools and methods	ZMQ, OOP, SQL, Git, UML, Latex, R markdown and Scrum
Advanced techniques	Multi- and many core programming (OpenMP, Pthreads, CUDA), Microservices, Kalman Filter and Deep Reinforcement Learning (Keras/TensorFlow)
Languages	Dutch, English

Experience

Vrije Universiteit — *Amsterdam*

Research Intern (Master Thesis) — *Jan. 2021 - Jun. 2021*

- Researching a specific transfer learning approach for deep reinforcement learning in the context where the internal dynamics between two tasks are the same but the visual representations differ. We learn a low-dimensional encoding of the environment, meant to capture summarizing abstractions, from which the internal dynamics and value functions are learned. Transfer is then obtained by freezing the learned internal dynamics and value functions, thus reusing the shared low-dimensional embedding space.

TNO — *The Hague*

Research Intern Robotics (Bachelor Thesis) — *Jan. 2019 - Jun. 2019*

- At the Intelligent Autonomous Systems department (unit: Defensie) I have conducted an exploratory research with the main question: How to develop a small autonomous indoor drone? The main problem in this field is that every consumer drone uses a GPS signal in combination with an IMU for positioning/navigation purposes to achieve a stable flight. But GPS signals are unreliable or unavailable in an indoor environment, and IMU's introduce drift and are thus also unreliable.
- I have introduced a novel and efficient algorithm for position and orientation estimation of an indoor drone based on a horizontal 2D LIDAR. The estimation is then merged with the IMU estimation using a Kalman filter to achieve realtime estimations.

QWIC
Amsterdam

Software (Embedded) Engineer - Part-time — *Jan. 2018 - Dec. 2018*

- Developing microcontrollers for the e-bike to control and listen to the motor, console and batterypack over a CANbus network, the microcontroller serves as a controller for the user of the bike to configure the motor realtime.
- Additionally built two proof of concepts: the first one had a wifi module (ESP2866) and the other uses bluetooth (ESP32) to communicate with a server (via mobile phone) to store all the CANbus messages remotely, to remotely analyse all the information of a bike. Built a simple front-end aswell to plot this data in a graph(real-time).
- Arduino, C++, Node.js, MongoDB, AngularJS, react-native, BLE

Info.nl
Amsterdam

Researcher and software engineer — *Sept. 2017 - Jan. 2018*

- For the excellence minor "research in emerging technology" we created an autonomous posture-correcting wearable for the company info.nl and wrote a research paper examining the effectiveness of various haptic patterns during exercises using the prototype. Used Latex, C++ and Python. `https://github.com/geoffreyvd/posture-helper-wearable/`

KPN
Amsterdam

Full-stack developer — *June. 2017 - Aug. 2017*

- Continued after my internship at Cloud Control with a full time summer job as a full-stack developer (NodeJS, expressJS, microservices, ZMQ, etc). Cloud Control provides a dashboard with the status, performance and maintainability for your cloud subscriptions(AWS, Azure, CloudNL).

KPN
Amsterdam

Intern full-stack developer — *Febr. 2017 - June. 2017*

- Internship at KPN working as front-end developer on Cloud Control (AngularJS 1.6) within the English-spoken Scrum team. Also wrote a research paper about the technical aspects of an upgrade to Angular 2 (Mainly on how Angular 2 achieves better performance). Also on boarded on the back-end team

Brain Breakers
Amsterdam

Full-stack developer — *June. 2015 - Sept. 2015*

- As a freelance project for an escape room(`www.zombie-escape.nl`) I developed an online booking with online payment (using the Mollie API) and an administration dashboard. The website launched in 8-2015, but went offline in 2020 due to COVID-19. The reservation system was a crucial asset to the company.(AngularJS, PHP and MySQL)

Minty Media
Haarlem

Intern full-stack developer — *Apr. 2015 - June. 2015*

- I engineered an invoice administration web application: `https://github.com/geoffreyvd/Offerte`. AngularJS, PHP and MySQL.

Actacom
Haarlem

Intern web developer — *Jan. 2015 - Apr. 2015*

- Worked within the Research and Development scrum team. Used AngularJS and ASP.net Web API to develop a new student administration portal to replace the deprecated flash application

Committees

Amsterdam University of Applied Sciences
Amsterdam

Member of the selection committee for a new professor for the Digital Life research group — *July. 2018*

- The Digital Life Lab is an applied research group focussed on the effect of sensors and digital information on everyday life. I was one of the five members (among researchers of the group and the head of CMD) of the selection committee responsible for selecting the successor of the current professor Ben Krose. In a time where the Amsterdam University of Applied Sciences (AUAS/HvA) is aiming to integrate research more tightly with education, I focussed on judging whether the candidate has affinity with education and if he/she has any ideas/experience with combining research with education, among others.

Future plans

I am looking forward to develop a product that involves robotics or some other smart system that uses techniques such as machine learning, signal processing (kalman filter, fourier transform,..), information extraction, big data engineering, mathematical models (SIR, dynamic programming,..) or parallel/distributed programming.