Nik Vaessen

EDUCATION

Doctor of Philosophy 12/2020 - current
Multi-Task learning in diverse speech tasks
Radboud University
Nijmegen, Netherlands

Master of Science 08/2018 - 08/2020
Computer Science, subtrack Machine Learning
KTH Royal Institute of Technology
Stockholm, Sweden

Bachelor of Science 09/2015 - 07/2018
Data Science & Knowledge Engineering
Maastricht University
Maastricht, The Netherlands

SKILLS

Programming Languages:
Java, Python (PyTorch, TF2), JavaScript/Typescript (react and react native)
Software:
AWS, GCP, Docker, Terraform, git, ssh, maven, npm, LaTeX, MongoDB, PostgreSQL, IntelliJ IDEA, debian/ubuntu
HTTP(S), TCP, DNS, XMPP
Languages:
Dutch and English on a professional level.

WORK EXPERIENCE

Master Thesis intern 40 hours per week 01/2020 - 08/2020
I worked on my master thesis at Scania's AI for autonomous driving team. The research focused on developing a multi-task neural network performing 2D object detection and semantic segmentation with real-time constraints. Implementation was done in TensorFlow 2.1.

Full-stack Software Developer 16 to 40 hours per week 04/2019 - 10/2019
Summer job at a small start-up working on a fintech mobile application named Mysaly. I worked on both front-end (react native, expo), back-end (typescript, postgreSQL) and DevOps (AWS, terraform). App is available *on the app store(s)*.

Junior Software Developer 16 to 20 hours per week 10/2017 - 08/2018
I was part of the Video engineering team at Atlassian. This team worked on the open source *Jitsi Meet* product for Atlassian. Atlassian used Jitsi Meet in HipChat and Stride to enable video conferencing. First 6 months were an internship. Worked on speech-to-text integration (React, Java) and did research for bachelor thesis.

Software Developer 20 to 40 hours per week May-August of 2016 and 2017
Google Summer of Code 2016 and 2017 for the Jitsi organization. Google Summer of Code is a program hosted by Google which sponsors university students to work on an open-source project during the summer break. I worked on implementing transcription capabilities in Jitsi Meet. This task involved front-end work in React and back-end work in Java.

SOFTWARE & RESEARCH PROJECTS

- I participated in the Reproducibility Challenge of NeurIPS 2019 by re-implementing the paper "Latent weights do not exist: Rethinking Binary Neural Network optimisation". Code can be found *here* and publication submission *here*. This project achieved an A grade for the course "Advanced Deep Learning".
- I developed a *CNN for colourising grey images* for my "Deep Learning for Data Science" course. Resulted in an A grade.
- For my course "Speaker and Speech Recognition", I worked on a *CNN for detecting classical composers*. Resulted in an A grade.
- I am maintaining *jiwer*, a python package I developed during my bachelor thesis to calculate the accuracy of speech-to-text models.
- Throughout Google Summer of code and my internship at Atlassian I worked on *Jitsi Meet*. The main repository, which is the front-end client written in React, can be found *here*. I have contributed most to *Jigasi*, which manages the transcription using the Google Cloud Speech API. *Jicofo* controls conferences with the use of XMPP signalling.
- *webrtc-vad-wrapper* is a JNI wrapper around a C++ voice activity detector.
- *A 6 month long university project* which involved controlling a robot arm using reinforcement learning algorithms such as DQN. Written in Python and used Keras.

EXTRA-CURRICULAR

- Participated in Spotify DevX hackathon 2018, where my team and I build a *web app*. Got 2nd place.
- Mentored a student for Google Summer of Code 2018, which involved meeting on a weekly basis as well as answering questions throughout the summer.
- *Gave a talk* about "Speech-to-Text in Jitsi Meet" at FOSDEM 2018

INTERESTS/ HOBBIES

Free (open-source) software, badminton, reading novels (science fiction, crime), Dota 2 and space/astronomy