Rob Romijnders

Machine Learning researcher

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Education

2015-2018 **Master Signal Processing Systems**, *Eindhoven University of Technology*, Eindhoven, Netherlands, *8.4 GPA* cum laude.
Specialization in Machine Learning. Teaching assistant for Fundamental Aspect of Random Processes

2015-2016 **Minor Data mining**, *National University Singapore*, Singapore, *7.6 GPA*.
Exchange semester

2014-2015 **Minor Computational Engineering**, *Southern Federal University*, Rostov-on-Don, Russia, *8.5 GPA*.
Exchange semester

2011-2014 **Bachelor Technical Medicine**, *Twente University*, Enschede, Netherlands, *8.3 GPA* cum laude.
Bachelors at intersection of medicine, computer science and engineering. Teaching assistant for Signal processing, Vector Calculus, Optics theory

Master thesis

title *Unsupervised domain adaptation for semantic segmentation*

supervisors dr. G. Dubbelman, P. Meletis

abstract Semantic segmentation is a task in computer vision to assign a label to each pixel of an image. Given an image of an urban scene, for example, the goal is to label every pixel as car, sidewalk, building, sky, and etcetera. Recent advancements gained good performance by using Fully Convolutional neural networks. However, changing the domain of the images reduces the performance. For example, a segmenter trained on German cities has reduced performance for Italian cities. Therefore, this work focuses on domain adaptation of these networks.

technologies Python, Tensorflow, Pillow

Experience

Vocational

2019–Present **AI resident**, *Google Brain*, Zurich, CH.
Research program within Google Brain. Focus on 'Representation learning in video'.

Internship

Summer 2016 **Machine Learning Intern**, *Erasmus Medical Centre*, Rotterdam, NL.
I developed a classification and annotation model for electrograms. It classifies heart contractions in one of 4 categories and annotates the main deflection. Final presentation here

Projects

All code and slides are on robromijnders.github.io

Independent Research

conference poster — **Applying Deep Learning to Basketball Trajectories**.
In this project, we model basketball shots and predict hits and misses. I worked together with Rajiv Shah, whom I met on Reddit. The paper got accepted at KDD '16 conference. A pdf is here and in blog here

blog — **robromijnders.github.io**.
On my github, I implement interesting papers, work out interesting models and experiment with new ideas. Most notable uncertainty in neural networks and semi supervised learning on graphs

Talks

conference talk — **Bayesian Deep Learning**, *PyData Amsterdam 2018*.
Discuss how Bayesian inference improves calibration of prediction uncertainties and also provides a handle to prune neural networks. The video of the talk is here

conference talk — **Using deep learning in natural language processing**, *PyData Amsterdam 2017*.
I explain the main Deep learning models in Natural Language Processing. The video of the talk is here

meetup — **Comparing RNN and CNN**, *Data Science Zwolle meetup*.
Slides are here

tutorial — **Deep learning: algorithms and deployment**, *BigData Conference iSense*.
Slides are here

Miscellaneous

review — **ICLR 2020 reviewer**.
I helped out with reviews for the conference. Served as official reviewer for one paper.

summer school — **Gaussian Processes Summer School**.
Attended GPSS in summer 2018

Publications

conference poster — **Data Selection for training Semantic Segmentation CNNs with cross-dataset weak supervision**, *P. Meletis, R. Romijnders, G. Dubbelman*, 2019 IEEE ITSC.

conference poster — **Domain Agnostic Normalization for Unsupervised Adversarial Domain Adaptation**, *R. Romijnders, P. Meletis, G. Dubbelman*, IEEE WACV 2019.

conference poster — **Applying Deep Learning to Basketball Trajectories**, *R. Shah, R. Romijnders*, KDD '16 August 13–17, 2016, San Francisco, CA, USA, DOI: 10.475/123 4.

journal paper — **Applying Deep Bidirectional LSTM and Mixture Density Network for Basketball Trajectory Prediction**, *Yu Zhao, Rennong Yang, Guillaume Chevalier, Rajiv Shah, Rob Romijnders*, Optik - International Journal for Light and Electron Optics Volume 158, April 2018, Pages 266–272, DOI: j.ijleo.2017.12.038.

unpublished — **Classification of fractionated electrograms in epicardial mappings using a recurrent neural network**, *R. Romijnders, L.M. Eerikinen, R. Vullings, N.M.S. de Groot*, link.