

# Guido ZUIDHOF

## PERSONAL DATA

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OCCUPATION: Research Engineer at Blue Vision Labs  
LOCATION: London, United Kingdom  
EMAIL: [me@guido.io](mailto:me@guido.io)

## EDUCATION

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2016-2017 COMPUTING SCIENCE (DATA SCIENCE SPECIALIZATION)  
Master of Science, **Radboud University**, Nijmegen

2015-2017 ARTIFICIAL INTELLIGENCE  
Master of Science, **Radboud University**, Nijmegen

2011-2015 KUNSTMATIGE INTELLIGENTIE (ARTIFICIAL INTELLIGENCE)  
Bachelor of Science, **Radboud University**, Nijmegen

## WORK EXPERIENCE

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CURRENT June 2017-	Research Engineer at BLUE VISION LABS, London <i>Robotics and Computer Vision company</i> Blue Vision Labs is a tech startup working on machine perception technology, which is currently in stealth mode.
February 2016- September 2017	Machine Learning Consultant at LEGAL INTELLIGENCE, Rotterdam <i>Search engine for legal documents</i> Involved in two pilot projects involving the automatic labeling of law area of documents, which can be a valuable filter option, and personalized recommendations of new content based on previously saved documents.
April 2016- October 2016	Research Intern at DIAGNOSTIC IMAGE ANALYSIS GROUP, Nijmegen <i>Radboud University Medical Center (RadboudUMC)</i> Research intern for a project at the digital pathology department on detection and classification of breast cancer in whole-slide histopathology images using deep learning.
February 2016- June 2016	Teaching Assistant at RADBOUD UNIVERSITY, Nijmegen <i>Artificial Intelligence Programme</i> Student teaching assistant for the <i>AI at the Web Scale</i> course, in which students learn about the actual application of AI techniques (mostly machine learning).
2015-2016	Student Assistant at DONDERS INSTITUTE, Nijmegen <i>Institute for Brain, Cognition and Behaviour</i> Developed various demos for the NoiseTagging project. NoiseTagging is a BCI (brain computer interface) technique where the user is capable of giving input by looking at flickering visual stimuli, which is classified from EEG data. These demos were developed using the Unity3D engine and targeted both desktop and mobile platforms.

## SKILLS

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Machine Learning: Python (NUMPY, SCIPY, SCIKIT-LEARN, PANDAS, THEANO, LASAGNE, PYTORCH, GENSIM)  
Programming: Object-Oriented, Functional (ELIXIR), Logic (PROLOG)  
Workflow: Version control (GIT), Automated testing (TRAVIS-CI, CIRCLE-CI)

Web Development: HTML, CSS, JavaScript (VUE.JS, WEBRTC, REACT, METEOR)  
Game Development: Unity3D (C#), three.js, Phaser, ARKit, SceneKit  
Mobile Development: iOS (SWIFT 4)

## NOTABLE PROJECTS

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Winter 2017	<b>NATIONAL DATA SCIENCE BOWL 2017</b> <i>Kaggle Machine Learning competition</i> - TOP KERNEL WINNER - \$5000 PRIZE Wrote the most popular Kaggle kernel in the biggest yearly machine learning competition. This kernel described how to preprocess and segment lungs in CT images. To this day it is still the most upvoted kernel of any Kaggle competition.
Summer - Autumn 2016	<b>DETECTION OF BREAST CANCER IN WHOLE-SLIDE IMAGES</b> <i>Master's thesis project</i> Research internship at the Digital Pathology research group at RadboudUMC hospital Nijmegen involving the detection and characterization of breast malignant lesions in histopathology whole-slide images (WSIs) using stacked convolutional neural networks. WSIs are very high resolution (100,000x200,000 pixels) pictures of thin slices of tissue.
Summer 2016	<b>LUNA16 - LUNG NODULE DETECTION</b> <i>Medical grand challenge</i> - 1 <sup>ST</sup> Developed a system for automatic detection of pulmonary nodules in CT scans, which are the early manifestations of lung cancers. Achieved best performance in the nodule detection track, beating FDA approved commercially available systems by a wide margin.
Summer 2016	<b>ULTRASOUND NERVE SEGMENTATION</b> <i>Kaggle machine learning competition</i> - 9 <sup>TH</sup> (TOP 1%) Tackled the problem of identifying nerve structures in ultrasound images using a hybrid approach using classical computer vision features (SIFT) and an adapted version of the fully convolutional network Unet architecture.
Fall 2015 - Early 2016	<b>CLASSIFYING LAW AREA OF DUTCH LEGAL DOCUMENTS</b> <i>Text mining project</i> Law area meta-data is often not present in in legal documents. Manual classification is a time-consuming process. Created a method to automatically solve this multi-label classification problem. A recall, precision and F-score of greater than 0.96 was achieved.
Summer 2015	<b>DIABETIC RETINOPATHY DETECTION</b> <i>Kaggle machine learning competition</i> - 11 <sup>TH</sup> (TOP 2%) Applied a convolutional neural network approach to automatically diagnose diabetic retinopathy, which is the leading cause of blindness in the US, from retina pictures. Trained on GPUs on a large cluster, achieving better than human expert performance.
Spring 2015	<b>NATIONAL DATA SCIENCE BOWL</b> <i>Kaggle machine learning competition</i> - 68 <sup>TH</sup> (TOP 7%) Developed a deep learning method for automatically classifying plankton from low resolution black and white images. Also helped develop a method for unsupervised feature extraction based on kNN clusters of image patches, which performed worse.
2011-2017	<b>MISCELLANEOUS</b> <i>Hobby and university projects</i> Throughout university completed many software projects, both curricular and extracurricular. These include a robot cooking assistant, a novel Swype-based input method for VR, video games, game plugins, 48 hour game development competitions (gamejams), an educational in-class quiz application, an optimizer for contextual bandit problems, a WebRTC signalling server, and a live in-browser plotting service. See <a href="#">GitHub profile</a> .