

# Matthias Wright

## Curriculum Vitae

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## Education

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- 2018 – 2019 **Master of Science**  
Machine Learning and Autonomous Systems  
*University of Bath*
- 2015 – 2018 **Bachelor of Science**  
Applied Mathematics and Computer Science  
*FH Aachen University of Applied Sciences*
- 2015 – 2018 **CCI-Certified Software Developer**<sup>1</sup>  
*RWTH Aachen University*
- 2002 – 2015 **A-levels (High School Diploma/Abitur)**  
*Rudolf Steiner School Aachen (Waldorf School)*

## Work Experience

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Sep 2015 – Aug 2018

RWTH Aachen University  
**Software Developer**

During my undergraduate studies, I was employed at the Department of Medical Informatics (approximately 20 hours per week during the semester and full-time during semester breaks). I built a number of smaller web applications, wrote a parser for EDF files, created several visualization tools, and developed an Android app.

## Projects

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Apr 2018 – Aug 2018

Detecting Abnormalities in Clinical Data with GANs  
**Bachelor's Thesis**

During my research phase, I conducted two separate experiments. In one experiment, I examined whether generative adversarial networks are capable of detecting cardiac arrhythmia in ECG recordings. For this, I trained a generative adversarial network with normal ECG recordings. Afterwards I fed two separate test sets into the trained discriminator, one containing normal ECG recordings and the other containing arrhythmic ECG recordings. The hypothesis was that, because the discriminator was trained only on normal recordings, the loss would be larger for the test set containing arrhythmic recordings. For the other experiment, I repeated the procedure in order to examine whether generative adversarial networks, when given the blood gas measurements of a patient, can decide whether or not that patient has respiratory failure.

**Tools:** Python, TensorFlow

## Programming Languages

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Fluent	Java, Python
Intermediate	JavaScript, MATLAB
Beginner	C/C++

## Frameworks/Technologies

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Intermediate	TensorFlow, SQL, Git, $\text{\LaTeX}$ , UNIX
Beginner	Keras

## Languages

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Native	German
Fluent	English
Elementary	French

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<sup>1</sup> I completed a degree apprenticeship program called MATSE offered jointly by RWTH Aachen University, FH Aachen University of Applied Sciences, and the Chamber of Commerce and Industry, Aachen. As part of this program, I completed a bachelor's degree program in Applied Mathematics and Computer Science at FH Aachen and a CCI-certified vocational training program in Software Development at RWTH Aachen while working as a junior software developer at the Department of Medical Informatics at RWTH Aachen. More information is available here: <http://bit.ly/degree-program>