



Markus Lux

Dr. rer. nat.

***Strong passion and experience in software engineering.
Applied machine learning and data science.
Studies of computer science and intelligent systems.***

Born December 24, 1986
Languages German (native), English (fluent)
Knowledge Software Design, Algorithms, Machine Learning, Data Science, Agile Development, Productization, Linux/CLI, Git, Docker, Databases, C++, Java, Python, R, MATLAB

Education

2014 – 2018 **Dr. rer. nat.**, *Bielefeld University*, magna cum laude (“very good”).
October April Efficient Grouping Methods for the Annotation and Sorting of Single Cells

2012 – 2014 **M. Sc.**, *Bielefeld University*, 1.2 (“very good”).
October September Studies of Intelligent Systems

2009 – 2012 **B. Sc.**, *Bielefeld University*, 1.4 (“very good”).
October September Studies of Cognitive Computer Science

Work experience

2018 – **Senior Function Design Engineer**, *Continental Teves AG&Co. oHG*, Frankfurt.
September Predictive models for automated driving systems, emergency brake assist (C++, Python)

2011 – 2012 **Software Engineer**, *comspace GmbH&Co. KG*, Bielefeld.
July September Backend algorithm development (Java, PHP)

2009 – 2010 **Software Engineer**, *SYNAXON AG*, Bielefeld.
July February Enterprise Java architectures

2005 – 2008 **Training, Software Engineer**, *SYNAXON AG*, Bielefeld.
August July Enterprise Java architectures

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*Due to privacy reasons, this version does not contain contact information.
Please use the e-mail address on my website.*

Research

- 2014 – 2018
October June
Research Associate, *Bielefeld University*.
German-Canadian DFG International Research Training Group (1906/1)
(C++, R, Python, MATLAB)
- 2016 – 2016
April October
Research Stay, *BC Cancer Agency, Terry Fox Laboratory*, Vancouver, Canada.
Computational methods for gating cell populations in Flow Cytometry (R)
- 2015 – 2015
July September
Research internship, *Illumina Ltd.*, Cambridge, United Kingdom.
Algorithms for fast clustering of large-scale DNA sequences (C++)
- 2012 – 2014
October September
Scientific Assistant, *Bielefeld University*.
Machine Learning work group
- 2010 – 2011
March June
Student Assistant, *Bielefeld University*.
Development and visualization of linguistic networks

Selected scientific theses and publications

- Lux, Markus (2018). “Efficient Grouping Methods for the Annotation and Sorting of Single Cells”. PhD thesis.
- Lux, Markus, Ryan Remy Brinkman, Cedric Chauve, Adam Laing, Anna Lorenc, Lucie Abeler-Dörner, and Barbara Hammer (2018). “flowLearn: Fast and precise identification and quality checking of cell populations in flow cytometry”. In: *Bioinformatics* 1, page 9.
- Lux, Markus, Jan Krüger, Christian Rinke, Irena Maus, Andreas Schlüter, Tanja Woyke, Alexander Sczyrba, and Barbara Hammer (2016). “acdc – Automated Contamination Detection and Confidence estimation for single-cell genome data”. In: *BMC bioinformatics* 17.1, page 543.
- Lux, Markus, Alexander Sczyrba, and Barbara Hammer (2015). “Automatic discovery of metagenomic structure”. In: *Neural Networks (IJCNN), 2015 International Joint Conference on*. IEEE, pages 1–8.
- Lux, Markus (2014). “Machine Learning for Big Data in Biomedical Research”. Master’s thesis. Bielefeld University.
- Mokbel, Bassam, Sebastian Gross, Markus Lux, Niels Pinkwart, and Barbara Hammer (2012). “How to quantitatively compare data dissimilarities for unsupervised machine learning?” In: *IAPR Workshop on Artificial Neural Networks in Pattern Recognition*. Springer, pages 1–13.