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Education and Qualifications

2009 Diploma in Mathematics
University of Bonn
Thesis: "Singularities of Minimal Degenerations in Affine Grassmannians"

2014 PhD in Computer Science
University of Bonn
Thesis: "Methods for Learning Structured Prediction in Semantic Segmentation"

Current Position

Since 2016 **Lecturer in Discipline at Columbia University**
Teaching in the Data Science Master program,
scikit-learn development and various research activities.

Past Positions

2010–2013 **PhD Student at the Department of Computer Science, University of Bonn, Germany**
Advisor: Prof. Sven Behnke.

2010–2013 PhD Scholarship of the B-IT, Bonn/Aachen, Germany

2011 and 2013 Lecture Assistant at the Department of Computer Science, University of Bonn, Germany

2013–2014 **Machine Learning Scientist at Amazon Development Center Germany**
Design and implementation of large-scale machine learning and computer vision applications.

2014–2016 **Research Engineer at the NYU Center for Data Science**
Development of open source tools for machine learning and data science.

Awarded Grants

- *Extension & Maintenance of Scikit-learn* (PI). Alfred P. Sloan Foundation. $313k. 2017-2019.
- *Analysis and Extension of Scikit-learn* (PI). Bloomberg. $63k. 2017-2018.
- *SI2-SSE: Improving Scikit-learn usability and automation* (PI). NSF. $400k. 2017-2020.
- *Big Data Map and Assets Platform (BDMAP) Phase I - Collaborative Resource and Understanding eXchange (CRUX)* (senior personel, project lead). NSF. $100k. 2017-2018.

Open Source Contributions

- Maintainer and core developer for the Python machine learning package "scikit-learn"[1].
- Creator and maintainer of the Python package "PyStruct"[2] for structured prediction.
- Co-author of "CUV", a C++ and Python interface for CUDA, targeted at machine learning and computer vision.[3]
- Contributor to the Python computer vision package "scikit-image"[4].

[1] http://scikit-learn.org/
[2] http://pystruct.github.org/
[3] https://github.com/deeplearningais/CUV
[4] http://scikit-image.org/

Peer Reviewing

- Neural Information Processing System
- Journal of Machine Learning Research
- Journal of Pattern Analysis and Machine Intelligence
- European Conference of Computer Vision

Other Skills

- Spoken languages: German (native), English (full professional proficiency), French (elementary proficiency)
- Programming Languages: Python (expert), Cython (intermediate), C++ (intermediate), Java (basic), Scala (basic)

Publications

Books

1. Müller, A and Guido, S. (2016). *Introduction to Machine Learning with Python*. O'Reilly.

Journal Publications

1. Schulz, H., A. Müller, and S. Behnke (2011). Exploiting local structure in Boltzmann machines. *Neurocomputing* **74**(9), 1411–1417. ISSN: 0925-2312.
2. Abraham, A., F. Pedregosa, M. Eickenberg, P. Gervais, A. Müller, J. Kossaifi, A. Gramfort, B. Thirion, and G. Varoquaux (2014). Machine learning for neuroimaging with scikit-learn. *Frontiers in Neuroinformatics*.
3. Müller, A. and S. Behnke (2014b). PyStruct: Structured Prediction in Python. *Journal of Machine Learning Research*.
4. Varoquaux, G., L. Buitinck, G. Louppe, O. Grisel, F. Pedregosa, and A. Müller (2015). Scikit-learn: Machine Learning Without Learning the Machinery. *GetMobile: Mobile Computing and Communications* **19**(1), 29–33.
5. Huppenkothen, D., L. M. Heil, D. W. Hogg, and A. Mueller (2016). Using machine learning to explore the long-term evolution of GRS 1915+ 105. *Monthly Notices of the Royal Astronomical Society* **466**(2), 2364–2377.
6. Severin, R. K., X. Li, K. Qian, A. C. Mueller, and L. Petukhova (2017). Computational derivation of a molecular framework for hair follicle biology from disease genes. *Scientific reports* **7**(1), 16303.

Conference Publications

1. Müller, A., H. Schulz, and S. Behnke (2010). Topological Features in Locally Connected RBMs. In: *Proceedings of the International Joint Conference on Neural Networks (IJCNN)*.
2. Scherer, D., A. Müller, and S. Behnke (2010). Evaluation of pooling operations in convolutional architectures for object recognition. In: *Proceedings of the Interntional Conference on Artificial Neural Networks (ICANN)*. Springer, pp.92–101.
3. Schulz, H., A. Müller, and S. Behnke (2010a). Exploiting local structure in stacked Boltzmann machines. In: *European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN)*.
4. Müller, A., S. Nowozin, and C. Lampert (2012). Information Theoretic Clustering Using Minimum Spanning Trees. In: *Proceedings of DAGM / OAGM*, pp.205–215.
5. Müller, A. and S. Behnke (2014a). Learning Depth-Sensitive Conditional Random Fields for Semantic Segmentation of RGB-D Images. In: *Proceedings of the International Conference of Robotics and Automation (ICRA)*.