Andreas Christian Müller

Machine Learning Scientist

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Current Position

since 2020 **Principle Research SDE at Microsoft** Research and open source activities in the Gray Systems Lab.

Past Positions

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

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.

2016–2020 **Lecturer in Discipline, Associate Research Scientist at Columbia University**
Teaching in the Data Science Master program, scikit-learn development and various research activities.

Professional Activities

Awarded Grants

- *Scikit-learn maintenance and enhancement to gradient boosting and search* (PI). Chan-Zuckerberg $150k. 2019-2020.
- *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.
- *Building Blocks and Search Improvements for Automated Machine Learning* (PI). DARPA. $351k. 2018.

Open Source Contributions

- Core developer and member of the Technical Committee for the machine learning package "scikit-learn"[1].
- Creator of the "dabl"[2] library for human-in-the-loop data science.
- Creator of the Python package "PyStruct"[3] for structured prediction.
- Co-author of "CUV", a C++ and Python interface for CUDA, targeted at deep learning.[4]
- Contributor to the Python computer vision package "scikit-image"[5].

Journal Editorial Board

- Action Editor, Journal of Machine Learning Research, OSS Track

Selected Publications

1. 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.
2. Müller, A., S. Nowozin, and C. Lampert (2012). Information Theoretic Clustering Using Minimum Spanning Trees. In: *Proceedings of DAGM / OAGM*, pp.205–215.
3. 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*.
4. Müller, A. and S. Behnke (2014b). PyStruct: Structured Prediction in Python. *Journal of Machine Learning Research*.
5. 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.
6. Müller, A and Guido, S. (2016). *Introduction to Machine Learning with Python*. O'Reilly.

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