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# SEBASTIAN RASCHKA

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GitHub: <https://github.com/rasbt>

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## PROFESSIONAL EXPERIENCE

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- Developed novel algorithms and Python/C++ software frameworks for predicting 3-dimensional protein-ligand binding poses on the time scale of seconds with a predictive accuracy equal to existing approaches
- Contributed machine learning algorithms, such as ensemble classifiers, to the scikit-learn machine learning library; developed and maintained multiple open-source projects for machine learning and data science hosted on GitHub
- Developed a hypothesis-driven methodology and Python software framework for large-scale virtual screening allowing researchers to identify target molecules of protein receptors at an unprecedented scale in databases of more than 15 million compounds
- Collaborated with domain experts in biology and designed machine learning models in time-sensitive projects to successfully predict receptor antagonists of sea lamprey mating pheromones, which exceeded the expectation by the funding agency with a signal inhibition of 93%
- Managed Linux systems and clusters as IT system administrator of the Protein Structure and Analysis laboratory at Michigan State University (May 2015-present)
- Collected and analyzed 30+ terabytes of data in time-sensitive projects using state-of-the-art statistical and computational methods
- Established a new workflow for reproducible research based on version control (Git), efficient SQL database management, and unit testing

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## COMMUNITY / EDITORIAL ACCOMPLISHMENTS

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- Published “Python Machine Learning,” the all-time bestselling book at *Packt Publishing Ltd.* and number 1 bestseller in the categories *Data Modeling & Design* and *AI & Machine Learning* on Amazon.com
- Published “Heat Maps in R: How-to” (*Packt Publishing Ltd.*) which has been used by many researchers to enhance their data analysis and communicate their scientific results more effectively
- Recipient of the MSU *BMB Outstanding Graduate Student Award* (2016-2017)
- Ranked among the top 100 influencers and brands in *Artificial Intelligence* and *Machine Learning* by *Analytics Vidhya* and top 1 data scientist to follow on GitHub by *Analytics Vidhya*

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## EDUCATION

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**Michigan State University**  
*Ph.D. candidate, Quantitative Biology Program*

East-Lansing, Michigan  
2012-present

**Heinrich-Heine University**  
*Bachelor of Science, Focus Area: Developmental Genetics*

Duesseldorf, Germany  
2008-2012

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## REFERENCES

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Available upon request