

Marcel Rothering

Curriculum Vitae

Neumühlweg 123
D-90449 Nürnberg, Germany
☎ +49 173 / 1588526
✉ marcel.rothering@gmail.com

Personal Details

Date of birth 22/10/1987
Place of birth Vreden
Citizenship German
Gender Male

Data Scientist

03/2019 - today Data Scientist at *Siemens AG - Digital Industries*

Customer Facing Data Scientist for Proof of Concepts

- productive anomaly detection application for depaneling machines
- productive statistical test reduction application for end of line test for electrical drives
- productive anomaly detection application for a kodak printer used in the production line of female-care products
- productive statistical analysis application for maximizing body paintshop line utilization and finding failure root causes
- design of experiment for optimizing printer settings for printed circuit board production
- process optimization for the production of semolina

Projects with focus on Machine Learning Operations

- development of monitoring algorithms for an energy cost reducing model predictive control application in office buildings
- development of monitoring algorithms for a welding point virtual testing model
- operationalizing a false call reduction algorithm on industrial edge for a surface mount technology production line

Product Portfolio Development

- AI Operations Services for machine learning solutions running on Siemens Industrial Edge device
- python SDK extension for generalizable data quality monitoring of tabular data on Siemens Industrial Edge
- customer and problem hypothesis validation

Additional Tasks

- founding of a data science journal club about trustworthy AI and Machine Learning operations
- organizing of a data science guild to discuss data science projects
- supervision of graduate and undergraduate students
- leading several ideation and scoping workshops for data science use cases
- generating intellectual property (four filed patent applications used in production)

Main Technologies and Tools

- platforms: Azure ML Studio, AWS Sagemaker, Siemens Industrial Edge
- tools: Python, Visual Studio Code, Pandas, scikit-learn, keras, Matplotlib, plotly

IT Consultant

02/2017 - 12/2018 Consultant for Big Data and Data Science at *saracus consulting GmbH*

Tasks

- projects with focus on Data Science and Data Engineering for Insurance Companies
- cluster computing with Cloudera CDH and Hortonworks HDP
- leading data science, data engineering and cluster administration workshops for customers
- supervision of student seminars in collaboration with the *Westfälische Wilhelms-Universität Münster*

Main Technologies and Tools

- platforms: AWS, Cloudera and Hortonworks
- tools: Spark, Hive, Impala, Sqoop, Python Pandas, scikit-learn and Keras

Research Assistant & PhD Student (Academic degree: Dr. rer. nat.)

12/2012 - 12/2016 Research assistant and PhD student for theoretical particle physics at the *Westfälische Wilhelms-Universität Münster*

10/2016 PhD thesis; *Grade: magna cum laude*

Title *Precise predictions for supersymmetric particle production at the LHC*

Emphasis Theoretical particle physics

Supervisor Prof. Dr. Klasen

Tasks

- program development for resummation predictions for supersymmetric particle production at the Large-Hadron-Collider (<https://resummino.hepforge.org/>)
- tutor for undergraduate courses like mechanics, thermodynamics, electrodynamics and quantum mechanics

-supervision of Bachelor and Master theses

-supervision of an internship project: DAAD RISE (Research Internships in Science and Engineering)

Publications

1. B. Fuks, M. Klasen, M. Rothering, *Soft gluon resummation for associated gluino-gaugino production at the LHC*, JHEP 07:053, 2016.
2. B. Fuks, M. Klasen, David R. Lamprea, M. Rothering, *Revisiting slepton pair production at the Large Hadron Collider*, JHEP 01:168, 2014.
3. B. Fuks, M. Klasen, David R. Lamprea, M. Rothering, *Precision predictions for electroweak superpartner production at hadron colliders with Resummino*, Eur. Phys. J. C 73, 2480, 2013.
4. B. Fuks, M. Klasen, David R. Lamprea, M. Rothering, *Gaugino production in proton-proton collisions at a center-of-mass energy of 8 TeV*, JHEP 10:081, 2012.

Academic Studies

Master's Degree Program in Physics (Academic Degree: M. Sc.)

10/2010 - 12/2012 Master's degree in physics at the Westfälische Wilhelms-Universität Münster;
Grade: 1.2

2012-11-21 Master's thesis; Grade: 1.0

Title *Resummation predictions for slepton pair-production and implications for dark matter*

Emphasis Theoretical particle physics

Supervisor Prof. Dr. Klasen

Minor Economy for natural scientists (innovation management and concepts of strategical analysis)

08/28 - 09/08/2012 International Summer School and Conference on High Energy Physics: Standard Model and Beyond (ISSCSMB '12)

2012-08-28 - 2012-09-08 International Summer School and Conference on High Energy Physics: Standard Model and Beyond (ISSCSMB '12)

Bachelor's Degree Program in Physics (Academic Degree: B. Sc.)

10/2007 - 10/2010 Bachelor's degree in physics at the Westfälische Wilhelms-Universität Münster;
Grade: 2.1

2010-07-19 Bachelor's thesis; Grade: 1.3

Title *Optically induced dynamics in coupled two-level-systems*

Emphasis Theoretical solid state physics

Supervisor Prof. Dr. Kuhn

Minor Philosophy (logic and metaphysics)

School Education

8/2003 - 7/2007 Secondary school *Städtisches Heriburg-Gymnasium in Coesfeld*; *Abitur-Grade: 2.7*
8/1998 - 7/2003 Secondary school *Städtisches Gymnasium Nepomucenum in Coesfeld*
8/1994 - 7/1998 Primary school *Pankratius-Grundschule in Gescher*

Language Skills

German Mother tongue
Englisch Fluent written and spoken
French Elementary level

Technical Skills

Programming languages Python (professional), C/C++ (advanced), R (basics), Java (basics), Scala (basics), Fortran(basics) and Shell (basics)
Software-Tools and Frameworks Mathematica, Spark, Hive, Sqoop, several Python libraries for machine learning like Keras, Tensorflow, Sklearn, Pandas, Matplotlib and Seaborn, L^AT_EX, Gnuplot and MS-Office
Hadoop Distributions Cloudera CDH and Hortonworks HDP
Operating Systems Windows and Unix-based systems
Cloud Platforms Amazon Web Services and Microsoft Azure

Certificates

CCA Spark and Hadoop Developer
Cloudera Certified Administrator for Apache Hadoop (CCAH)
MIT Professional Education - Internet of Things: Roadmap to a Connected World

Nürnberg, November 10, 2022