Sebastian Schönnenbeck

Curriculum vitae

Personal information

Name	Sebastian Schönnenbeck
Date of birth	April 5th, 1989
Address	Herbert-Rabius-Str. 18
	53225 Bonn
	Germany
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Professional experience

since 01/2018 — Machine Learning Expert, Comma Soft AG
- Implementation of and consulting on AI-solutions (primarily deep learning powered natural language processing) from the use case ideation process to the implementation of the solution in the operational process
- Sample project: Development of a state-of-the-art deep learning system for automatic document classification in mail processing

10/2016 - 12/2017 — Postdoctoral researcher, RWTH Aachen University
- Research in algorithmic algebraic number theory and its applications

06/2016 - 09/2016 — Research intern, QuArC-group, Microsoft Research Redmond
- Research on the application of algebraic number theory to quantum computing
- Development of a state-of-the-art compiler for quantum computers

10/2013 - 06/2016 — Scientific researcher, RWTH Aachen University
- Research in algorithmic algebraic number theory
- Teacher's assistant for the computer algebra course

04/2010 - 09/2013 — Student assistant, RWTH Aachen University
- Student tutor for various courses

Education

Doctoral studies in mathematics

10/2013 - 10/2016	RWTH Aachen University Overall mark: summa cum laude

Master of Science in mathematics

04/2012 - 09/2013	RWTH Aachen University Overall mark: Excellent (1.0)

Bachelor of Science in mathematics

04/2009 - 03/2012	RWTH Aachen University Overall mark: Excellent (1.0)

Skills

Technical knowledge

Data science	Experience in data analysis and machine learning / deep learning in Python including familiarity with the following packages: ○ Pydata stack (Numpy, Pandas, Scikit-Learn,...) ○ Deep learning frameworks (PyTorch, Keras,...)
Big data	Intermediate user of the Hadoop / Spark ecosystem Intermediate knowledge of SQL
Programming	Advanced knowledge of Python Basic knowledge of C++
CAS	Advanced knowledge of various computer algebra systems such as Magma, GAP and Maple
Other	Fluent user of the typesetting language LaTex

Languages

German	Native speaker
English	Fluent
French	Basic knowledge
Portuguese	Basic knowledge

Academic activity

Publications

2019   *Automorphic Forms on Feit's Hermitian Lattices* - with N. Dummigan, Exp. Math (2019)

2018   *Number theory and quantum computing*, Snapshots from Oberwolfach (2018)

2017   *Computing S-unit groups of order*, accepted for publication in Int. J. Number Theory

2017   *Simultaneous computation of Hecke operators*, J. Algebra (2018)

2017   *Resolutions for unit groups of orders*, J. Homotopy Relat. Struct. (2017)

2015   *Computing in arithmetic groups with Voronoi's algorithm* - with O. Braun, R. Coulangeon, and G. Nebe, J. Algebra (2015)

Patents

2016   *Exact quantum circuits and circuit syntheses for qudit and multiple qubit circuits* - joint with A. Bocharov and V. Kliuchnikov, U.S. Patent Application No. 62/410,330, Filed October 19, 2016

Research stays

03/2016   University of Pennsylvania at the invitation of Julia Hartmann

07/2014   University of Bordeaux at the invitation of Renaud Coulangeon

11/2013   NUI Galway at the invitation of Alexander Rahm

Selected conferences and workshops

04/2017   Workshop *Arithmetic Golden Lattices*, American Institute of Mathematics in San Jose

01/2016   Oberwolfach workshop on lattices and applications in number theory

01/2015   Winter meeting on Bruhat-Tits buildings, Imperial College London

Awards and honors

2014   Springorum commemorative coin for an outstanding master's degree in mathematics

2013   Schöneborn award for an outstanding bachelor's degree in mathematics

2010-2013   Fellowship holder of the Bildungsfonds NRW

2009-2013   Dean's list

Community involvement

03/2014 - 03/2016   Head coach of the second men's team at Aachener Hockey Club (AHC)

08/2010 - 03/2015   Head coach of various youth teams at AHC

Bonn, October 22, 2019