

Niklas Rieken

Curriculum Vitae

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in niklas-rieken



I am a computer scientist (BSc, MSc) with a PhD in Economics specializing in algorithmic methods, auction theory, and mathematical optimization. Having acquired a strong mathematical background with hands-on experience in Python, C/C++ and Linux-based workflows, I now seek for software-oriented roles where analytical rigor and algorithmic thinking are central.

Core Skills

Programming	Python (advanced), Bash (proficient), PHP (proficient), C/C++ (intermediate)
Tools	vim (advanced), LaTeX (+TikZ) (advanced), git (proficient), Gurobi (proficient)
Systems	GNU/Linux (proficient), AWS (basics, EC2, S3)
Web & Data	HTML (proficient), CSS (proficient), SQL (proficient)
Practices	agile Development , DevOps , Clean Code
Methods	Combinatorial Optimization , Graph Algorithms
Languages	German (native), English (fluent), Spanish (basics)

Work Experience

09/2019–08/2025	Doctoral Researcher , <i>Chair of Management Science</i> , RWTH Aachen University Researcher in Combinatorial Optimization and Algorithmic Game Theory. Matchings, matroids, mechanism design, teaching courses in mathematical economics. Responsible for IT and some organisational tasks within the group.
11/2017–04/2019	Research Assistant , <i>Chair of Operations Research</i> , RWTH Aachen University Developer for GCG (<i>generic column generation</i> , MIP solver). Performance tests, extracting statistics, and collecting information on vast instance sets.
04/2014–08/2019	Teaching Assistant , <i>Chair of Computer Science 7 / TCS</i> , RWTH Aachen University TA for undergraduate courses in theoretical computer science. Teaching exercise groups, grading assignments and exams.

Education

09/2019–11/2025	Doctorate (PhD) , <i>Economics</i> , RWTH Aachen University Thesis: Matroid Optimization in Auction Theory Final Grade: summa cum laude (highest distinction)
02/2017–05/2019	Master of Science , <i>Computer Science</i> , RWTH Aachen University Thesis: Network Pricing Games with Atomic Splittable Followers Final Grade: 1.4
10/2012–02/2017	Bachelor of Science , <i>Computer Science</i> , RWTH Aachen University Thesis: Alphabets and Machines as Structures and Their Decision Problems Final Grade: 2.5

Projects & Honors

Podcast	Algo2Go , <i>topics in computer science and applied mathematics</i> , 2021 Co-hosted German podcast with Prof. Dr. Laura Vargas Koch and Dr. Björn Tauer to explain algorithms to a broad audience. Responsible for content planning, research, and production.
Teaching Award	Prize for outstanding teaching activities , 2024 Faculty 8 of Economics, RWTH Aachen University

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Dortmund, May 7, 2026