Rainer Gogel, CFA

Data Scientist - Machine Learning
Financial Markets Expert

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📄 Resume PDF

LANGUAGES

German (Native)

English (Professional)

Spanish (Elementary)

INTEND TO LEARN - LIST

Knowledge Graphs, Graph Machine Learning, Further NLP tools and techniques, Vector Databases, LangChain, Generative AI (Text, Vision, Sound)

👤 IN MY OWN WORDS

After 10+ years in the Asset Management and Financial Consulting industry, in 2018 I decided to make a change and started to study Computer Science with a focus on Data Science and Machine Learning. In 2020, I joined Commerzbank AG and have since been working as a Data Scientist (working student) in their Big Data & Advanced Analytics department. I was trusted to collaboratively work on some important Machine Learning projects and so gained hands-on experience and insight into novel data analysis methods. Although I had already successfully written and used computer programs to analyze securities and manage investment funds before, I am fascinated by these novel approaches and eager to apply them.

🎓 EDUCATION

M.Sc. in Computer Science
2021 - Spring 2024

Frankfurt University of Applied Sciences, Frankfurt

Full time Master degree studies in Computer Science with a chosen focus on Machine Learning and Data Science. I learned the theoretical background of Machine Learning and its algorithms such as Logistic Regression, SVM, Ensembles (Random Forests, XGBoost, etc) and Artificial Neural Networks (ANNs). I extended my knowledge to other Machine Learning fields such as NLP and Computer Vision. I applied this knowledge in multiple Machine Learning projects gaining further experience with Python and Python Data Science related packages.

- Current Grade: 1.4
- (Optional) Modules chosen: Machine Learning, Data Mining, Learning from Data, NLP Project, Speech Recognition, Computer Vision, Adaptive Knowledge Systems
- Master-Thesis: NLP topic (tba)

B.Sc. in Computer Science
2018 - 2021

Frankfurt University of Applied Sciences, Frankfurt

Full time Bachelor degree studies in Computer Science. I refreshed and enhanced my knowledge in mathematical fields and learned the theoretical concepts of Computer Science. I gained hands-on programming experience in different programming languages during multiple projects. I particularly enjoyed practically oriented modules such as Algorithms & Data Structures, Databases and Computer Networks. My Bachelor-Thesis elaborated on Machine Learning topics and feature contribution techniques such as Shapley values.

- Final Grade: 1.6
- Bachelor-Thesis: Title: "An approach to Out-of-Model feature explanations in the application of credit fraud detection"

M.A. in Economics
1994 - 1995

University of San Francisco, CA, USA

Full time Master degree studies in Economics with a focus on quantitative subjects that was partly funded by merit scholarships due to outstanding grades. I also worked as a Teaching Assistant, conducted exercises and designed, corrected and graded undergraduate exams.

- GPA: 3.875
- Focus: Statistics, Econometrics, Macroeconomic Modelling
- Master-Thesis: Title: "The macroeconomic aspects of German Reunification"

Pre-Diplomas in Economics, Law, Political Science
1991 - 1994

Ruprecht-Karls University, Heidelberg

Preliminary diplomas in three different degree studies. My main interests were Macroeconomics, Economic Policy and Public Law.

💼 EXPERIENCES

Data Scientist
2020 - Present

Commerzbank AG, Big Data & Advanced Analytics, Frankfurt

I have worked and currently work as a part time Data Scientist (working student) on two main projects:

- Machine Learning model to detect corporate credit fraud
- Large Language Models (LLMs) to classify the text of News articles

In the practice semester ("Praxisphase") of my Bachelor studies, I worked at porting the existing corporate credit fraud model from the programming language R to Python and wrote all code for it. I used Python packages (pandas, re, spaCy, etc) to preprocess and prepare text and other unstructured and structured data. I applied traditional algorithms such as Logistic Regression, SVM, Random Forests, XGBoost and optimized the model's hyper-parameters. I customized and fine-tuned pretrained LLMs downloaded from huggingface. I adjusted my setup to and operated within the model's environment: Cloudera Data Science Workbench (CDSW), Hadoop Ecosystem, Google Cloud Platform (GCP), etc. I also became familiar with other Big Data related tools such as Git/Bitbucket, Confluence, Docker, Kubernetes, etc.

Consultant, CEO
2014 - Spring 2024

Portfolio-Resolution, Frankfurt

I advised institutional investors, particularly on their ABS/CDO portfolios. I analyzed securities, verified price marks and helped clients to meet regulatory requirements. I also advised clients on their portfolio holdings and made asset allocation recommendations.

Portfolio Manager - Entrepreneur
2013 - 2014

LeanVal Asset Management (formerly CCPM AG), Frankfurt

Entrepreneurial attempt and preparation to set up a quantitatively managed credit hedge fund using credit derivatives. The plan eventually failed as the main seed investor unexpectedly withdrew his initial commitment.

Head of Asset Management - Credits
2007 - 2012

I steered a team of seven Portfolio Managers that managed funds with a combined volume of EUR 1.3 Bio. through the financial crisis of 2008. I preemptively sold particularly risky securities before their market prize plunged. I implemented quantitative investment approaches to analyze securities and manage investment funds more effectively. I installed some infrastructural processes (E-Trading, Back-Office, etc.) to take away administrative burdens from Portfolio Managers. I road-showed the company and our fund management concepts and won prestigious management mandates from institutional investors.

Head of Asset Management - Credits, Portfolio Manager
2000 - 2007

W&W Asset Management, Stuttgart

I led a team of three Portfolio Managers that managed two dedicated credit funds with a combined volume of EUR 800 Mio. I developed a comprehensive concept to manage these funds and analyze securities quantitatively. I implemented it by writing code in Excel Visual Basic (VBA). The two funds won many awards and prizes for their outstanding performance:

- W&W Euro Corporate Bond Fund
- W&W Asset-Backed Securities (ABS) Fund

In 2000/2001, I also received the CFA and DVFA/CEFA designations from the CFA Institute and the DVFA Deutsche Vereinigung für Finanzanalyse und Asset Management e.V.

🗂 GITHUB REPOSITORIES

My projects are hosted on Github. Click links below for some of my public repos or extracts thereof:

UASFRA-BS-BachelorThesis - Python/Jupyter Notebook to my Bachelor-Thesis (2021) in Computer Science. Explaining features that are not part of a Machine Learning model by using Transfer Learning and Shapley Values/SHAP.

UASFRA-MS-ProjektIntellSys - M.Sc. Computer Science project in cooperation with www.right-basedonscience.de - Jupyter notebook/Python scripts to extract ESG related KPIs from PDF documents.

UASFRA-MS-LFD-FINETUNING-DEMO - Part of M.Sc. Computer Science project. Demo Jupyter notebook/Python scripts to download a pretrained language model from huggingface and finetune it according to own topic domain and needs.

NLP-CleanText - Part of a larger NLP Machine Learning project. Python scripts to clean and preprocess raw, unprocessed and messy text that mostly use regular expressions (Python re package, Python 3.11).

📄 PUBLICATIONS

My publications as a Computer Science student can be downloaded as PDF.

Talk 15: Transformer Applications in NLP: An explanation of BERT
Rainer Gogel
Frankfurt University of Applied Sciences, M.Sc. Computer Science, Learning from Data, 2023

An approach to Out-of-Model feature explanations in the application of credit fraud detection
Rainer Gogel
Bachelor-Thesis, 2021

Report Praxisphase: My introduction to Machine Learning with Python (German)
Rainer Gogel
Report-Praxisphase, 2020/21

🔧 SKILLS & PROFICIENCY

Skill	
Python	
pandas, NumPy, re	
scikit-learn	
PyTorch	
spaCy	
matplotlib, seaborn, plotly	
sql, mysql, sqlalchemy	
Cloudera Data Science Workbench (CDSW)	
hadoop ecosystem	
GCP, Azure, AWS	
html, css	
javascript, typescript	
tensorflow	
Java, C, C++	