Dr. Stefan Pasch

Data Scientist

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Nationality: German
Date/Place of birth: December 30, 1991 / Frankfurt am Main, Germany

PROFILE

7 years of experience in developing and managing data-driven solutions using Machine Learning (ML). While my early career has been centred around the high-level strategic need and interpretability of data analyses, my recent work also focused on the engineering and implementation aspects of data science. This includes Docker, GPU-acceleration, different cloud or on-premise environments, and project management. Therefore, I can cover the whole data science workflow from the idea through the analysis to the implemented product.

Key Achievements:
- Trained and implemented a state-of-the-art transformer-based language model for automated question answering at a German financial public institution.
- Trained the worldwide first transformer-based language model that estimates a sustainability (ESG) score for firms based on actual ESG-ratings.
- Various research publications on topics such as NLP, corporate strategy, or digitization.

EDUCATION

10/2014 – 09/2020	**Graduate School of Economics, Finance, and Management (GSEFM), Frankfurt am Main** *PhD & Master of Science in Quantitative Management* • Final PhD Grade: Summa Cum Laude (1.0)
10/2011 – 09/2014	**Goethe University, Frankfurt am Main** *Bachelor of Science in Economics & Business Administration* • Final Grade: 1.2 (awarded as one of the top graduates)

WORKING EXPERIENCE

09/2020 – Today	**SVA (German IT Consultancy), Wiesbaden** *Data Science Consultant & System Engineer, Department Big Data* • Training and implementation of state-of-the-art NLP solutions, including question-answering, automated search, and text classification • Developed an NLP-toolkit for Sustainable Finance (ESG) that includes text classification, zero-shot classification, sentiment analysis, and semantic search • Building up a pipeline for automated web-scraping • Data value workshops and sales pitches
09/2015 – 08/2020	**Goethe University, Frankfurt am Main** *Research Assistant, Chair of HR Management* • Managing the data infrastructure in research collaborations with firms • Building up and analyzing large datasets using Python, STATA, and MS Excel • Co-developed and taught a course on digitization and data-driven analytics in HR
01/2018 – 04/2018	**European Bank for Reconstruction and Development (EBRD), London** *Research Intern, Office of the Chief Economist*

- Worked with large datasets, such as the Gallup Poll, on international migration
- Gathered geographical data using the Google Maps API for Python and presenting spatial results in maps using STATA

08/2013 – 10/2013   **KfW, Frankfurt am Main**
IT Intern, Business Informatics Department
- Support of project management office, compilation of project overviews, and preparation of call for bids for IT-services

SELECTED CONSULTING PROJECTS

09/ 2020 – 11/ 2021   **Implementing an internal ML-based search engine**
Public Institution from the Financial Sector
- Training and implementing of language models for automated searches in documents relevant for regulatory purposes.
- Pre-training of AI for NLP using transformer-based Deep Learning Methods, which are corresponding to the latest state of research.
- Fine-tuning of language models through labelled internal documents for picking up the domain specific and complex structure of those documents.
- Implementation of a training and evaluation pipeline on a GPU accelerated container platform.
- Model life cycle management by continuously tracking and reporting of the model performance.

09/ 2015 – 09/2020   **360°-Feedback System in Banking**
BankM
- Supporting the execution of an innovative 360° evaluation system
- Collection and analysis of the data over time to consult the bank about the functioning of the evaluation system

05/ 2016 – 01/ 2018   **Analysis of Personnel Data**
Large German Franchise Firm
- Managed the data transfer with Nextcloud
- Analyzed the data with respect to: Effect of mystery-shoppers, characteristics of successful franchisees, employee turnover

PUBLICATIONS

- Pasch, S., & Ehnes, D. (2022). *arXiv preprint arXiv:2202.02268* & *Medium-Blogpost*.
  StonkBERT: Can Language Models Predict Medium-Run Stock Price Movements?

- Ha, S. Y., Pasch, S. (2022). *Medium-Blogpost*.
  AI Design: Testing Vision Transformers on Design Images.

- Pasch, S., & Ehnes, D. (2020). *Academy of Management Proceedings. (Vol. 2020, No. 1)*.
  Implementing Corporate Culture Top-Down or Bottom-Up? Cultural Gaps Over Time and Firm Performance.

- Pasch, S. (2020). *SSRN Working Paper. (No. 3568940)*.
  Rage Against the Regime? Risk of Job Automation and Political Attitudes in China.

- Ha, S. Y., & Pasch, S. (2019). *SSRN Working Paper. (No. 3497575)*.
  Design Thinking and Contingency Theory: Why Some Firms Benefit More from Design Thinking than Others

- Pasch, S. (2018). *IZA Conference Paper*.
  Corporate Culture and Industry-Fit: A Text-Mining Approach.

SKILLS & CERTIFICATES

IT Tools	• Advanced Skills: Python, STATA, R, Latex, NLTK, SQL, Huggingface, Databricks • Good Skills: HTML, Docker, Matlab, TensorFlow, AWS, Azure
Quantitative Methods	• Data preparation / Preprocessing • Supervised Learning / Unsupervised Learning • Model Monitoring / Model-Life-Cycle-Management • Natural Language Processing (NLP)
Certificates	• Databricks Certified Professional Data Scientist • Databricks Developer Essentials • AWS Certified Cloud Practitioner • Google Project Management Professional Certificate • NVIDIA Data Science Foundations • NVIDIA Deep Learning Institute: NLP
Language Skills	• German: Native • English: Fluent • Korean: Beginner (6-months beginner course)

HONORS

Scholarships	• National Scholarship Program (Deutschlandstipendium) • Economic Society Frankfurt
Awards	• On Dean's List during B.Sc. • Awarded as one of the top B.Sc. graduates • Best first-year PhD student of Mgmt. & Marketing track • First place in 2017 and 2018 teaching evaluation (TA of awarded course) • Etecture Prize (worth 5,000€) at IBM Hackathon

EXTRACURRICULAR ACTIVITIES

Research and Blogging (See Publications)
• In my spare time, I explore the possibilities of AI by applying state-of-the-art ML-tools into other fields like Management or Finance by writing blogs, publishing research articles, or building small demos

Game In-Risk Out
Application Software (joint with Christopher Grohmann)
• Tool to learn and measure risk preferences for personal investment decisions playfully

Students Meet Refugees
Volunteer, Treasurer, and Co-Director
• Charitable collaboration between Goethe University and AWO to teach German to Eritrean refugees

Hobbies
• Climbing/Bouldering, Football, Economics & Politics, Stock Market & Investing

Frankfurt am Main, April 3, 2022