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 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 allows me to 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 and 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 and 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 – Today	**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. 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, JavaScript, 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 new fields like Design 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

S. Pasch