

Piotr Antoniak

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EXPERIENCE

Research Analyst

April 2022 - July 2023

European Central Bank; MacroPrudential and Financial Stability

Germany

- Development of a top-down reverse stress testing model that allows to simulate thousands of scenarios and test multiple parallel constraints (solvency, leverage, liquidity) of Eurozone banks. It utilizes exposures to interest rates, sovereign bonds, economy on industrial levels and unconventional monetary policy. Model's results are included in bi-yearly ECB's MacroPrudential Report and presented in front of all EuroArea Central Banks Financial Stability/MacroPrudential representatives;
- Fulfilled ad-hoc data requests from various, highly granular databases using SQL;
- Management of data pipelines utilized by members of my teams.

Financial Services Business Model Development Praktikum

2021 - 2022

BMW; references

Germany

- Developed proof-of-concept of a search and retrieval system for internal data drive and confluence page;
- Participated in development and deployment of a fraud detection model covering an entire continent - over 80 000 new customers yearly;
- Developed ML model and deployed it as a proof-of-concept for Customer Feedback division. It was trained to classify both sentiment and type of incoming feedback and was an improvement in terms of capabilities and accuracy over previously used rule based model;
- Built a few dashboards/simple pages using streamlit/flask serving as a GUI for ML models.

Hospitality Services

2017 – 2020

Aberystwyth University

United Kingdom

- Part time job in hospitality – barista, bartender, kitchen porter. One year in charge of the evening kitchen.

EDUCATION

Pompeu Fabra University and Universitat Autònoma de Barcelona

Barcelona, Spain

Master's Degree in Macroeconomic Policy and Financial Markets

2020 – 2021

Thesis: Predictive power in online investing chatter.

8/10

Aberystwyth University

Aberystwyth, United Kingdom

Bachelor's Degree in Economics

2017 – 2020

Thesis: Evaluation of the post-crisis monetary policy in the USA using Taylor rules.

First class

PROJECTS

Open Domain Question Answering; working demo | *python, torch, streamlit, GPT-3*

- A tool that can answer questions using documents or videos given to it.

Simple chatbot from scratch | *python, torch, flask*

- A simple chat bot that uses predefined question-answer pairs;
- It's simplicity is based on the fact that extending usage is just a matter of updating a .csv file.

Predictive power in online investing chatter | *python, tensorflow, torch, pandas, data streams*

- My Master Thesis.
- I investigated millions of comments on investing/trading forums in order to extract sentiment and check whether users retail traders are so unskilled as claimed by various studies.

GPT-2 twitter bot mimicking Central Banks speeches | *python, torch, scrapping, twitter API, Docker, AWS*

- A Twitter Bot based on GPT-2 further pre-trained on speeches from major Central Banks.

KEY WORDS FOR YOUR SCRAPER

- **Languages:** Python, MATLAB, SQL
- **Libraries:** pandas, numpy, matplotlib/seaborn, pytorch/tensorflow, scikit-learn, scipy, pymc
- **Tools:** Git, Amazon Web Services, MS Office, Bloomberg API
- **Statistics/Econometrics/ML/AI:** Generalized Linear Models, Random Forests, Boosting, SVM, LSTM, RNN, ConvNets, Transformers, MLP, Explainable-AI, Causal Inference, Time Series

OTHER

- Triathlete
- Mentor at DeepLearning.ai
- T Maelgwyn Davies Prize - Best Economics Dissertation (Aberystwyth, June 2020)
- Experience trading alternative assets (2017-2018) and options (2019-2020)