

# LEANDER LOEW

Frankfurt, Germany

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I have more than 5 years of experience in the **Data Engineering / NLP / Data Science** space. I gained this experience working in big corporations (e.g., Allianz), doing consulting work (e.g., for the European Space Agency, Cisco, Engie), and as CTO and co-founder of two startups in the **AI space**.

Main technical tasks I worked on included prototyping data MVPs with **Python, Jupyter, Pandas, PyTorch** and **Transformers**, generating datasets using **Selenium** and **Beautiful Soup**, setting up data warehouses and data lakes on **AWS** and **GCP** using **SQLAlchemy, Aurora, Postgres, Athena** and **S3**, and building scalable data and ML pipelines using **FastAPI, AWS Batch, Lambda** and **Docker**.

## SELECTED PROJECTS

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### Fraud Detection in Claims Management

*Allianz, University Hamburg, Max Planck Institute*

- At Allianz, we used a new data approach for fraud detection in claims management. We developed models based on **NLP** and combined it with a novel weighted loss method. I implemented an **MVP** and a **production version** in **Python**. Using this approach, we managed to **reduce false positive rates by more than 50%** while keeping the same recall compared to the **GBM baseline**. The results of this project have been **published in the academic Journal of Econometrics** and are used for a class on Artificial Intelligence at the Massachusetts Institute of Technology (see [An Explainable Attention Network for Fraud Detection in Claims Management](#) in cooperation with the University of Hamburg and the Max Planck Society).

### Prediction of Buyer Preferences in Commercial Real Estate

*Connect Real, deep-tech startup in the real estate space*

- As the CTO and co-founder of Connect Real, I was responsible for integrating public and proprietary data sources to build a holistic database software to predict preferences of commercial real estate buyers. The core product contained several components: **RDS-Postgres** and **SQLAlchemy** to build the database, **Lambda, Python, BS4** and **Selenium** for the integration of 120 public and proprietary data sources, scheduled tasks based on **Cloudwatch, Batch** and **Lambda** to keep the data up-to-date, various **ML based ranking algorithms** to predict buyer preferences and **Fastapi** as well as **Retool** to create the workflow tool for frontend users. The software was able to accurately predict an investor/property match with **more than 0.85 Roc Auc** and was used to cover real estate transactions worth **more than 1 billion EUR**.

### Sales Forecasting

*Novartis, Consultant*

- We supported Novartis to move to **Machine Learning based sales forecasting and financial planning**. I developed a novel algorithm based on **Bayesian Analysis** to measure the effects of different marketing approaches on various KPIs and to predict future sales. In addition, we focused on building support in the workforce by holding regular workshops and working closely with Novartis' data science and financial unit. Hence, we were able to reliably integrate all data sources and to deliver a production ready system in **Python on premise**.

## Climate Change Forecasting

*European Space Agency (ESA), Consultant*

- I led a team of PhD educated ESA employees to improve the techniques used for climate forecasting based on **satellite images**. We developed a **distributed Machine Learning setup** using **Athena** and **AWS Batch** to implement a novel **Deep Learning image precognition method** predicting different weather characteristics for imaging data. To accurately model the high dimensional data, we used **transformer architecture** and **GNAs**.

## Forecasting of Energy Imbalances

*Engie, Consultant*

- I led a team at Engie to improve the methods used for energy derivative trading. We used an **MVP approach** building a **forecasting model** integrating financial and climate data to predict energy demand imbalances. The selected model used an ensemble of **Gradient Boosting models** based on the **LightGBM** library and a **Deep Learning model** implemented in **Pytorch**. The new model significantly outperformed the methods in place. Then, a **Python Service** using **AWS Lambda** was implemented to deliver real time predictions for traders.

## WORK EXPERIENCE

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### Connect Real, Berlin

Jul 2020 - Today

*AI startup, CTO and Co-Founder*

Connect Real is an AI startup in the commercial real estate space funded by Entrepreneur First, a UK investor focused on deep-tech companies. As the CTO and co-founder I am responsible for **building the company's data product** using a "data first" approach. This involves the daily management of the product development pipeline, including **infrastructure, data engineering, Machine Learning** and **web development**.

### Entrepreneur First, Berlin

Apr 2020 - Jul 2020

*Deep-tech investor, Entrepreneur in Residence*

Selected as part of a group of 50 to found and build a high-growth technology startup. The program is backed by **Reid Hoffman** (founder of **LinkedIn**), the founders of **DeepMind** and **PayPal**, and some of the top investors in the world (Founders Fund, Greylock Partners, Lakestar, etc.).

### Economic AI, Munich

Feb 2019 - May 2020

*AI consultancy, AI Consultant*

- Economic AI is an ML consultancy, chaired by Prof. Dr. Martin Spindler, University of Hamburg. We advised various leading corporations, such as **Novartis**, on AI projects and use cases, holding workshops on the latest AI developments and implementing novel models using an MVP approach.

### Aesuna.io, Munich

Feb 2018 - Apr 2019

*Healthcare startup, Co-founder*

- Aesuna is a startup in the healthcare space I co-founded. My main role was developing the ICD code recommendation and classification algorithm using **Pytorch** and the **Transformers** library. I deployed the model using **AWS Lambda** and integrated it with **voice and text recognition using GCP**.

### Pi School, Rome

Aug 2018 - Feb 2020

*AI consultancy, AI Advisor*

During my time at Pi School, I was responsible for the successful implementation of more than **30 AI projects**. As a **project manager**, my tasks not only included the management of the projects from a technical and content perspective, but also various management tasks, including **leading various**

**PhD educated teams** in parallel and managing stakeholders at clients such as the **European Space Agency, Cisco** and **Engie**.

**Allianz Insurance, Munich**  
*Data Scientist*

Feb 2017 - Aug 2018

During my time at Allianz, I implemented various **Deep Learning** solutions using **R** and **Python** used for applications such as claims processing and fraud management.

## EDUCATION

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**Max Planck Society, University of Hamburg**

*2019 - 2020*

Independent Researcher

Department of Econometrics

Grant: PSP-Element U-8-8-11-RBE-XX-1598

Topics: Fraud Detection, Deep Learning, Graph-Structured Data

**University of Mannheim**

*2014 - 2017*

Bachelor, final GPA 1.6 (US GPA 3.7)

Erasmus Semester at Swansea University, UK

Bachelor thesis in cooperation with Allianz Insurance and University of Hamburg, Title: Automatic Claim Management using Convolutional Neural Networks

## TECHNICAL STRENGTHS

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**Data Engineering**

Pandas, Pandera, Pydantic

**Web Development**

Fastapi, SQLAlchemy, Retool, React

**Programming Languages**

Python, Javascript, SQL

**Infrastructure**

AWS, GCP, Docker, Lambda, RDS, Postgres, Aurora, Athena

**Machine Learning**

Transformers, NLP, Forecasting, Pytorch

**Project Management**

Github, Trello, Slack, Gsuit, Notion