Franz Maximilian Buchmann, PhD

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Professional Summary

An economist with a strong background in AI, Finance, and Statistics, adept at addressing the evolving challenges associated with digital and green transformations. Experienced in quantitative research in climate economics, Generative AI, and Machine Learning applications, with a proven ability to deliver impactful results through effective collaboration in diverse environments.

Work Experience

Senior Data Scientist — Valcon A/S *May 2024 - Present*

In my role as a Senior Data Scientist, I function as a technical lead for projects implementing ML/AI applications at Valcon Denmark. My responsibilities include the end-to-end delivery of AI client projects from discovery to delivery with a focus on operationalizing Agile and MLOps principles.

- Built an AI recommendation system for invoicing at a multinational damage restoration company, using autoencoders and large language models. Within six months of deployment, this application generated over 1.5 million DKK in additional revenue and recouped 64% of total costs.
- Developed the data strategy of an international living & sleep retailer, focusing on supply chain systems and data transparency. Analyzed the interplay between the systems-generated data with sustainability and digitization efforts through an extensive discovery phase. Delivered an actionable implementation plan complementing the overarching, company-wide strategy.

Senior Consultant in T&L Technology — PwC Denmark *Sep 2022 - Nov 2023*

As a Senior Consultant, I led data science initiatives in Tax and Legal services, developing innovative data applications to transform business processes and enhance client growth.

- Engineered tax engines to automate the processing of financial data for multinational groups, markedly reducing data errors in corporate tax reporting and receiving excellent client feedback.
- Implemented web-based document generation applications using Google Cloud, cutting tax documentation drafting time by up to 80% and improving output standardization.
- Functioned as Scrum Master in a cross-functional team, playing a key role in hiring and onboarding, thereby enhancing team performance and satisfaction.

PhD Fellow in Operations Management — Copenhagen Business School *Sep 2018 - Apr 2022*

My thesis (external link) investigated the interplay between environmental regulations and technology adoption in the maritime industry's green transition, offering valuable insights for policy makers and practitioners.

- Utilized advanced statistical methods, including quantile regression and bootstrapping, to demonstrate the diverse impacts of clean technologies on vessel energy efficiency.
- Compiled a unique dataset of over 2,000 vessels by integrating commercial API data on technical specifications with real-time operational data scrapped from AIS signals.
- Applied and fine-tuned Machine Learning models, such as Random Forests, for mixed data imputation, focusing on predicting green fuel adoption in the shipping industry.

Research Associate — Copenhagen Business School PRME *May 2017 - Jun 2018*

Conducted survey design, data collection, and statistical inference with panel models like Fixed-Effects for large-scale empirical studies in the domain of responsible management education.

Consulting Projects

Evidence-based priority setting for World Bank health projects — Results for Development   *2024*

Led the Generative AI powered comparative analysis for Results for Development (R4D) to support the World Bank in refining health financing priorities across low- and middle-income countries (LMICs) through detailed, evidence-based insights.

- **Responsibilities:** Designed and implemented a hybrid analysis approach leveraging GPT models for efficient, large-scale document review; utilized advanced natural language processing (NLP) techniques for consistent data extraction; coordinated with stakeholders to ensure alignment of AI findings with project objectives.
- **Impact:** Completed textual analysis and human review of 75 World Bank health project documents within one month, generating a unique qualitative dataset that produced actionable and testable hypotheses for strengthening health financing strategies across various country contexts.

Education

MSc Advanced Economics and Finance — Copenhagen Business School   *2016 - 2018*

- Final grade: 11.10 (Highest possible grade: 12.00) — Top 10% of graduating class.

BSc Economics — Ludwig Maximilian University Munich   *2012 - 2015*

- Final grade: 1.54 (Highest possible grade: 1.00) — Top 10% of graduating class.

Technical Skills

- **Programming Languages:** Python, SQL, JavaScript, R
- **AI & Machine Learning:** Pandas, NumPy, scikit-learn, PyTorch, TensorFlow, Transformers
- **Software Development:** Git, Docker, FastAPI
- **Data Engineering:** Apache Spark (*PySpark*), Delta Lake
- **Business Intelligence:** PowerBI, Seaborn, Plotly
- **Cloud Platforms:** Microsoft Azure (*ML, OpenAI, DevOps*), Databricks, Microsoft Fabric, Google Cloud
- **Other Skills:** Agile project management, MLOps (*MLflow*), Generative AI, Statistical analysis

Additional Information

- **Languages:** German (Native), English (Full professional proficiency)
- **Awards:** SAS Thesis Award Winner — Awarded for innovative use of data and statistical modeling (2018).
- **Teaching Experience:** Teach a *Managerial Economics* course at Copenhagen Business School, instructing and evaluating approximately 150 students per semester through lectures and hands-on exercise classes.