

Curriculum Vitae

Bernardo Freire

8/14/23

Personal Information

| Information | Details |
|-----------------|---|
| First Name | Bernardo |
| Last Name | Freire Barboza da Cruz |
| Birthday | 29/05/1985 |
| Nationalities | Swiss & Brazilian |
| Place of Origin | Wildberg ZH, Switzerland |
| Place of Birth | Rio de Janeiro, RJ, Brazil |
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Personal Profile

I am a former aeronautical engineer with 3 years of experience as a data scientist and a recent graduate of MSc in Data Science (summer 2023). During my 7 years as an aeronautical engineer, I managed complex interdisciplinary projects in aircraft structure development and certification. As a data scientist, I developed and maintained machine learning models, demonstrating a passion for learning and innovation.

Career

Stadler Rail AG, Data Scientist (06/2023 – present)

- Developed machine learning models for predictive maintenance, e.g., door systems, compressor systems, HVAC systems.
- Contributed to projects developing data-driven solutions for optimizing rolling stock maintenance processes.
- Established CI/CD pipeline for modeling activities and created Python packages for internal use.

Technologies: Gitlab, Gitlab CI/CD, Sklearn, FastAPI (Python, SQL, API)

Prognolite AG, Data Scientist (10/2022 – 03/2023)

- Developed regression models predicting turnover using customer data and external factors like weather and holidays.
- Created multi-output regression models to predict menu sales based on customer data and external factors.

Technologies: Github, Tidymodels, Sklearn, Random Forest, XGBoost, Cubist (R, Python)

Crealogix AG, Data Scientist (09/2021 – 09/2022)

- Developed prospect and upsell models.
- Extracted information from fact-sheets using customized OCR.
- Created user journeys for chatbot solutions using IBM Watson and Spacy.

Technologies: Sklearn, Spacy, Random Forest, XGBoost, RMarkdown (Python, SQL, R)

Bucher Leichtbau AG (01/2014 – 09/2021)

Compliance Verification Engineer (10/2017 – 09/2021)

- Advised and supported all departments of Bucher Leichtbau AG in initial airworthiness certification matters.
- Independently verified documentation for “minor” and “major changes” against certification requirements.

Technologies: FEMAP, Mechanical Engineering

Certification Engineer (01/2014 – 10/2017)

- Conducted FEM calculations/verification and prepared internal and external test reports.
- Communicated with customers, official bodies, and authorities.
- Consulted development department for design optimization.

Technologies: FEMAP, Mechanical Engineering

Education

- MSc in Data Science, Lucerne University of Applied Sciences (HSLU), 09/2020 – 06/2023
- BSc in Aviation ZFH, Zurich University of Applied Sciences (ZHAW), 09/2010 – 09/2013
- Federal vocational baccalaureate (BMS), Berufsmaturitätsschule Zurich (BMZ), 08/2008 – 08/2009
- Apprenticeship electrician EFZ, Gemeindewerke Rüti (GWR), 08/2002 – 08/2006

Commercial Projects

| Topic | Technology |
|--|---|
| Prospect and up-sell model for deposit account | Python, XGBoost, Shap, Pandas, Sklearn |
| Multioutput regression model for central kitchen | Python, Pandas, XGBoost, Sklearn, R, tidymodels |
| Multioutput regression model for bakery | Python, Pandas, XGBoost, Sklearn, R, tidymodels |

Side Projects

| Topic | Technology |
|--|---|
| Web-App for Project Management | Python, Flask, SQLAlchemy, SQLite, JINJA2 |
| Energy Dashboard | Python, AWS Lambda, S3, RDS, Streamlit |
| Electro Mobility in CH | MongoDB, Python, Streamlit |
| Personal Blog (ongoing) | Python, Statmodels, Pandas, Quarto |
| Streaming Wikipedia Changes | Apache Kafka, KSQL, Docker |

| Topic | Technology |
|--|--|
| Scraping of Netdoktor for ETL of Master Thesis | BeautifulSoup, Selenium, Pandas, Spacy |
| Scraping of Bettybossi for Nutrition Investigation | BeautifulSoup, Selenium, Pandas, Spacy |

Individual Interests

- Python Web Development
- Reading Articles on “Medium”
- Online Courses
- Traveling
- Surfing

References available upon request.