Alexandra Machado · CV

Data Analyst · Health Data & AI

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Professional Summary

Data analyst with 4+ years of end-to-end dashboard and analytics delivery (SQL, Python, Power BI, Tableau) at Airbus and Lisbon Municipality. Healthcare data projects on OMOP CDM, OHDSI and ATLAS cover cohort building, treatment pathways and a comparative drug safety study of GI bleeding risk, run on synthetic data. Builds AI-supported workflows that are documented, governed and under human oversight.

Core Skills

- **Data and ETL**: SQL (SQL Server, SAS, PostgreSQL, BigQuery, MySQL), R, Python (Pandas, scikit-learn, PySpark), JavaScript, Apps Script.
- **Dashboarding and BI:** Microsoft Power BI (DAX, M), Tableau, Qlik Sense, Looker Studio, Palantir Workshop, SAP Analytics Cloud.
- **Healthcare data:** OMOP CDM, OHDSI HADES, ATLAS; cohort building, treatment patterns, incidence analysis, survival analysis (Kaplan-Meier), patient segmentation (clustering). Coding systems: ICD-10, SNOMED (conditions), RxNorm and ATC (medications and therapeutic classes).
- **Governance and AI:** GDPR-aware data handling (pseudonymisation), documentation control, data definitions, compliance checking and monitoring of AI tools, human-in-the-loop workflows.
- **Cloud and tools**: Google Cloud Platform (GCP, Vertex AI, Google Agent Development Kit), Azure, Amazon AWS, Git/GitHub, Docker, Microsoft Excel, Google Sheets.

Healthcare & MLOps Projects · Personal 2022 – present · alex-data-projects.com

- **Cardiometabolic population analysis.** Built an end-to-end analysis of treatment adoption, healthcare resource use and patient segments on Synthea synthetic data (1,163 patients, 613-patient cohort). 60.5% started a core drug within a year of diagnosis (24% of type 2 diabetes patients began a diabetes drug within 90 days). Segmented 529 patients into 4 stable clinical groups with k-means clustering (bootstrap ARI 0.89) and profiled their treatment and visit patterns. *Tools: SAS (OMOP CDM ETL, cohort, Kaplan-Meier), Python (pandas, scikit-learn), Power BI.*
- **Comparative drug safety study: gastrointestinal (GI) bleeding risk with celecoxib vs. diclofenac**. Pharmacoepidemiologic comparison of celecoxib (selective COX-2 inhibitor) (target) with diclofenac (traditional non-selective NSAID) (comparator), with GI bleeding incidence. Event-free probability fell earlier and more steeply in the comparator group, reaching about 94.5% by study end versus over 96.0% in the celecoxib group. Synthetic data from Synthea for demonstration, cohort size 2,627. *Tools: R (Posit Cloud), OHDSI, OMOP CDM.*
- **Systemic lupus erythematosus (SLE) observational pipeline.** Designed and implemented an end-to-end pipeline to phenotype patient cohorts, validate clinical inclusion criteria and map longitudinal treatment pathways. Demonstration dataset from CMS 2008 - 2010 Synthetic Public Use File (SynPUF 5% sample). *Tools: SQL Server, OHDSI, OMOP CDM, ATLAS.*
- **Emergency department triage analysis.** Analysed mistriage, length of stay and blood pressure to identify where triage decisions diverged from outcomes. Mistriage affected 14% of visits, of which under-triage accounted for 10%; under-triaged patients included the most serious dispositions (death, surgery, ICU admission). Data from PLOS ONE. *Tools: SQL Server, Tableau.*
- **Nutrition AI APP.** A full-stack MLOps, multi-agent AI application that empowers users to query the complex USDA Food Data Central database using natural language. *Tools: BigQuery, Vertex AI, GCP.*

Work Experience

Data Analyst, Airbus Global Business Services (GBS) · April 2024 - present

- Built the ETL in Python and dashboards in Looker Studio for transport performance worldwide (urgencies, lead time, flows per transport mode, costs); the KPIs identified low-performing routes (between neighbouring countries) and supported lead-time improvement of 5%. Wrote the KPI definitions and rules for Lead Time and Urgencies, agreed with stakeholders.
- Built a Python/Code Repository for data transformation, registered the datasets in Palantir Ontology Manager and created a Palantir Workshop dashboard for promotional items, showing the highest-demand items and locations, so next year's volumes could be adjusted. Used by 32 stakeholders.
- Automated the collection of events attended by senior management worldwide into a single database, using Apps Script with scheduled triggers for the refresh and an automated weekly email on Fridays with the events summary, plus a Qlik Sense dashboard of topics, locations and event types. Distributed to 186 employees.
- Built AI OneVoice for Airbus communications, with a compliance checker and monitoring dashboard (GCP, Vertex AI, Data Store, BigQuery, Google Agent Development Kit), and a hub that centralises and tracks approval of team-built Gemini GEMs, keeping AI use documented and under human oversight.

Data Analyst, Center for Smart Management, Lisbon Municipality · Sept 2022 - April 2024

- Built a customer-service dashboard across six channels (phone, chatbot, email, apps, mail, citizen shop), with KPIs for tickets issued, drop-outs, waiting times, busiest services and headcount per channel. Results were used to reallocate staff from low-demand to high-demand services.
- Built an education dashboard covering ten years of student numbers per school, class density and extra activities offered. Dataset and metadata definitions published in the Power BI workspace.
- *Tools: Power BI (DAX, M), SQL Server, Excel.*

Architect Project Manager · 2006 - 2022

- Led a team of 10 architects, engineers and heads of service on large-scale projects. Offices: Feilden Clegg Bradley Studios (London), Massimiliano Fuksas Architects (Rome), Lisbon Municipality.

Health, Data and AI Training and Certifications

- AI in Healthcare, Stanford Online (Coursera) · 2026
- Python for Genomic Data Science and Introduction to Genomic Technologies, Johns Hopkins University (Coursera) · 2026
- AI Engineer Production Track: Deploy LLMs & Agents at Scale (Udemy) · 2026
- Machine Learning Engineer Learning Path, Google Cloud Skills Boost (Google) · 2025
- The Complete Python Bootcamp From Zero to Hero in Python (Udemy) · 2025
- Google Cloud Launchpad for Women EMEA - Cloud Digital Leader (Google) · 2024
- Certificate in Qlik Sense Analytics Development (Udemy) · 2024
- Earlier BI and data courses (2022–2023): Microsoft Power BI, Tableau Training for Data Science, SQL/MySQL, Data Analysis with Pandas and Python, Looker Studio (Udemy)

Education

- Master in Architecture, Oxford Brookes University · 2009 - 2010
- University degree in Architecture, Faculty of Architecture, Lisbon · 2000 - 2006

Language and Other Skills

- English – Advanced user. Portuguese - Mother tongue. Spanish / Italian - Basic user.
- Team spirit. Good communication skills.