

ANGELO PELISSON

Senior Data Scientist | Computer Vision · Predictive Maintenance · MLOps

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PROFESSIONAL SUMMARY

Senior Data Scientist with 5+ years building end-to-end machine learning solutions across oil & gas, finance, and automotive industries. Delivered production systems generating \$1M+ in client savings and contributed to securing strategic enterprise accounts. Specialized in computer vision, anomaly detection, predictive maintenance, and MLOps frameworks on Azure, Databricks, and AWS. M.Sc. in Engineering with two peer-reviewed publications and international research experience (Germany, DAAD scholarship).

EXPERIENCE

Senior AI/ML Research Engineer — Shape Digital

Jul 2025 – Present

Rio de Janeiro, Brazil (Remote)

- Lead technical owner of a **Fuzzy BowTie inference system** for offshore process safety and risk assessment, delivered in partnership with a major energy operator and a top research university; delivered first production milestone with full stakeholder approval and now scaling the system using historical failure data, work orders, and asset hierarchies.
- Designed a tag-clustering algorithm based on business rules that reduced the complexity of fragmented industrial datasets by **~90%**, unlocking previously unusable data for model training; led data analysis end-to-end including tag location inference.
- Architected an **Accelerated Deployment Framework** that reduced model deployment time from 3 days for 2 models to 1 day for 26 models (~13× throughput improvement); enabled the deployment pipeline that supported a strategic enterprise contract signing.
- Designed and built a modular **QA Library** in Python supporting unit and integration testing across dev/prod environments, adopted team-wide and integrated into the lifecycle of 100+ production models; led the initiative with 2 supporting data scientists implementing unit tests.
- Built a scalable **automated backtesting framework** supporting 100+ models at client-defined frequency, cutting model validation cycle from 7 days to 30 minutes (~96% reduction).
- Authored the team-wide internal **development & deployment guidebook**, standardizing QA and deploy processes and restructuring the model catalog (updated 50+ legacy entries).

Senior Data Scientist — Shape Digital

Jul 2024 – Jul 2025

Rio de Janeiro, Brazil (Remote)

- Led a **corrosion-detection computer vision PoC** on offshore spindle installations using **DeepLab semantic segmentation** with data augmentation and patching on 360° camera imagery (1,500 labeled images via LabelMe), achieving **~70% F1/IoU** and establishing the foundation for production rollout.
- Built **anomaly-detection pipelines** for offshore sensor data (drift detection); the early identification of an asset failure was instrumental in a key client renewing a 1-year contract.
- Delivered **predictive-maintenance models** for industrial spindle telemetry across 30+ assets and 4 clients, enabling early failure detection and reducing unplanned downtime.
- Developed a **knowledge-based sensor-comparison model** with adaptive normalization to detect faults across redundant and analog sensors at vessel scale (1,000+ sensors per asset).
- Owned the full ML lifecycle on the company's **proprietary ML platform** for two major oil & gas clients — versioning, deployment, monitoring, and engineering-feedback-driven adjustments.

Data Scientist — Keyrus

May 2022 – Jul 2024

São Paulo, Brazil

- Built a **probabilistic ML model** to predict damage risk to São Paulo's underground gas distribution network from third-party construction work (20–30 sites evaluated daily), generating **~\$55K USD in monthly operational cost savings (~\$650K annualized)** and a **70% productivity gain** for field engineers.
- Developed a **billing-rule optimization model** that delivered **~\$165K USD in identified savings** for the client.
- Delivered a **People Analytics solution** that identified improper reimbursements, recovering **~\$15K USD** and supporting data-driven HR decisions.
- Designed and implemented an **automated ML deployment pipeline** on Databricks, Azure ML, and h2o.ai for classification, regression, and anomaly detection — leveraging low-code/no-code patterns to shorten time-to-production.
- Drove data quality initiatives across Azure Data Factory, Synapse, and Azure Storage; coordinated delivery using Scrum across cross-functional teams.

Data Scientist — Grupo GCB

Sep 2021 – May 2022

São Paulo, Brazil

- Developed and monitored **credit-scoring and credit-loss prediction models** in production, supporting risk decisions for the company's credit operations.
- Designed and deployed an **end-to-end customer-prospecting model on AWS SageMaker** combining credit risk and behavioral scoring to support the expansion of the customer base.
- Built consistent databases and feature-engineering pipelines using Python, SQL, and object-oriented design patterns to enable reliable model retraining and monitoring.

Research Intern — CARISSMA — Technische Hochschule Ingolstadt

Oct 2020 – Mar 2021

Ingolstadt, Germany — DAAD scholarship

- Developed **Gaussian Process surrogate models** to replace computationally expensive Finite Element (FE) crash simulations, **reducing simulation runtime from 72 hours to 3 hours (24× speedup)** while maintaining low Mean Absolute Error against the ground-truth FE results.
- Co-authored a **peer-reviewed publication** (VDI, 2022) on metamodel robustness and predictive power for occupant safety considering human diversity.

EDUCATION

M.Sc., Electronic Systems Engineering — Universidade Federal de Santa Catarina (UFSC)

Joinville, Brazil · Feb 2019 – Jul 2021

MBA, Project Management — Universidade Tecnológica Federal do Paraná (UTFPR)

Brazil · Nov 2023 – Oct 2025

B.Sc., Electrical Engineering — Universidade Tecnológica Federal do Paraná (UTFPR)

Cornélio Procópio, Brazil · Mar 2013 – Aug 2018

TECHNICAL SKILLS

Languages: Python, SQL, PySpark, Bash

ML / Deep Learning: PyTorch, TensorFlow, scikit-learn, XGBoost, DeepLab, semantic segmentation, anomaly detection, time-series, Gaussian Processes, fuzzy inference, Bayesian methods

MLOps & Tooling: MLflow, Docker, Git, Azure DevOps, CI/CD, model monitoring, QA frameworks, automated backtesting

Cloud & Data: Azure (ML, Data Factory, Synapse, Pipelines, Storage), Databricks (Lakehouse, Delta Lake), AWS SageMaker, h2o.ai

Domains: Computer Vision, Predictive Maintenance, Process Safety & Risk, Anomaly Detection, Credit Risk, Sensor Analytics

PUBLICATIONS

- Plaschkies, F., Vaculin, O., Pelisson, A. (2022). "Rapid Estimation of Occupant Crash Behavior Considering Human Diversity: Robustness, Data Intensity and Predictive Power of Metamodels." VDI, pp. 313–326. doi.org/10.51202/9783181023877-313
- Pelisson, A., Covoos, T., Spengler, A., Jaskowiak, P. (2020). "Comparative Study of Photovoltaic Power Forecasting Methods." ENIAC, pp. 555–566. doi.org/10.5753/eniac.2020.12159

LANGUAGES

Portuguese (Native) · **English** (C1 – Professional Working Proficiency) · **German** (A2 – Elementary) · **Spanish** (A2 – Elementary)