

IAN PORTO E MELLO

Brasília, Federal District, Brazil

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Github: [GitHub](#)

Portfolio: [Portfolio](#)

OBJECTIVE

To work as a **Machine Learning Engineer**, **Computer Vision Engineer**, or **Data Engineer**, applying advanced AI, computer vision, and data engineering techniques to build reliable, scalable, and interpretable systems for real-world impact.

PROFESSIONAL SUMMARY

AI and Data Engineer with strong experience in **Machine Learning**, **Computer Vision**, and **Data Engineering**. Pursuing an M.Sc. in Computer Science at the **University of Brasília (UnB)**, focusing on **Point Cloud and Mesh Quality Assessment (PCQA/MQA)**.

Experienced across the full AI lifecycle: data collection, preprocessing, model development, evaluation, and deployment. Skilled in **Python**, **PyTorch**, **TensorFlow**, **OpenCV**, **Open3D**, **SQL**, and modern data pipelines. Combines research depth with an engineering mindset, optimizing for accuracy, latency, and maintainability.

PROFESSIONAL EXPERIENCE

Banco do Brasil *Brasília, DF — Mar 2024 – Present*
IT Systems Analyst

- Oversee nationwide IT operations, ensuring continuous visibility into equipment performance, availability, and lifecycle metrics across hundreds of branches.
- Design and maintain internal **data pipelines** and **relational databases** (PostgreSQL, SQL Server) for tracking assets, configurations, and incidents.
- Develop analytical dashboards and predictive maintenance models using **Python (Pandas)** and **Power BI**.
- Integrate heterogeneous data sources to support automated monitoring, improve response times, and enhance operational reliability.
- Coordinate with infrastructure teams to detect anomalies, mitigate failures, and ensure alignment with SLAs.
- Support incident response and crisis operations, using data-driven insights to prioritize repairs and maintain service continuity.
- Lead initiatives in automation, reporting standardization, and data quality governance across distributed systems.

CENSIPAM – Ministry of Defense *Brasília, DF — Sep 2021 – Dec 2023*
Machine Learning Engineer

- Contributed to an autonomous environmental monitoring system for the Legal Amazon using **Machine Learning** and satellite imagery to classify fire events under varying weather conditions.
- Geospatial Data Engineering:** Processed GeoTIFF/Shapefile datasets (VIIRS, MODIS, MapBiomas, DETER, GFED) and built Python pipelines using **Pandas**, **GeoPandas**, and **Rasterio**.
- Feature Analysis:** Performed correlation studies and 3D visual exploration to assess feature relevance for classifying four fire types.
- Model Development:** Built and tuned an **LSTM RNN** using **PyTorch**, achieving 77% accuracy in fire event classification.

- **Evaluation & Monitoring:** Used ML metrics, confusion matrices, and **TensorBoard** for visualization and training diagnostics.

UnB Internet of Things (UlIoT) Research Group
Researcher – Computer Vision & Embedded AI

Brasília, DF — Apr 2021 – Jan 2023

- Developed an intelligent crowd-detection platform using video analytics to identify high-density areas in real time.
- **Computer Vision Pipeline:** Implemented frame extraction, preprocessing, and ROI optimization using **Python** and **OpenCV**.
- **Model Integration:** Used **YOLOv4/YOLOv4-tiny** for person detection and bounding-box generation.
- **Distance Estimation:** Designed a trigonometry-based method to infer physical distance between bounding boxes using camera geometry.
- **Visualization:** Generated heatmaps, density maps, and dashboards for real-time monitoring and analytics.

EDUCATION

University of Brasília (UnB) <i>M.Sc. in Computer Science — Point Cloud & Mesh Quality Assessment</i>	<i>Feb 2025 – Feb 2027</i>
University of Brasília (UnB) <i>B.Sc. in Mechatronics Engineering</i>	<i>Jan 2017 – Dec 2023</i>

TECHNICAL SKILLS

- **AI/ML:** PyTorch, TensorFlow/Keras, Scikit-Learn, RNNs, CNNs
- **Data Engineering:** Pandas, NumPy, SQL, PostgreSQL, PySpark, Airflow, ETL Pipelines
- **Computer Vision & 3D:** OpenCV, Open3D, Point Clouds, Mesh Processing
- **Programming:** Python, C, C++, Rust
- **Tools:** Power BI, Git, Docker
- **Soft Skills:** Communication, Collaboration, Problem Solving, Product Mindset

LANGUAGES

- **Portuguese:** Native
- **English:** Fluent (Cambridge C1 Advanced – CEFR)

PUBLICATIONS

- *Sistema de aprendizado de máquina para tipificação de incêndios florestais na Amazônia com série temporal*
(Machine Learning System for Typifying Amazon Forest Fires Using Time-Series Data)
- *Sistema para a identificação de aglomerações operando em Redes IoT e Fog Computing*
(System for Identifying Crowds Operating on IoT and Fog Computing Networks)
- *Sistema monitor de aglomerações baseado em reconhecimento de padrões e cálculos de distanciamento social operante em rede IoT estruturada em Fog Computing*
(Crowd Monitoring System Based on Pattern Recognition and Social Distance Estimation in IoT Networks Structured with Fog Computing)