

Tiago dos Santos ▽ Machine Learning Engineer

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Experience (6+ years)

- 2021/01-Present** **Machine Learning Engineer; DefinedCrowd**
- Infrastructure setup for model serving and serverless functions. Implementation of pipelines for model monitoring and artifact tracking. Adapting model serving solutions for internal teams' usage.
- Tasks:** Deployment of KFServing, Nuclio; Model deployment with CI/CD; K8s logging to elastic;
- 2019/11-2020-12** **Data Infrastructure Engineer; DefinedCrowd**
- Development, deployment and monitoring of infrastructure and services for internal Data clients.
- Tasks:** Event Sourcing Infrastructure implementation; Data Observability processes; Data Democratization processes; Deployment and Monitoring of Kafka, Kafka Connect, JupyterHub, Druid, KSQLDB; Migration from Azure Data Factory to Airflow;
- 2019/03-2019/11** **Machine Learning Engineer; Stratio**
- Development of models (vehicle battery discharged - Random Forest, tire pressure - Variational Auto Encoder). CI/CD for model deployment. Infrastructure creation for the Stratio AI project. Dealed with Gigabyte size data (json/parquet).
- Tasks:** Batch and stream infrastructure implementation; Framework creation for project unification and ease to deploy on production; Development and iteration of models with human feedback; Development of dashboards / web apps for human feedback; Model monitoring and performance evaluation (recall, fpr, auc, others); Label Management;
- 2017/11-2019/03** **Machine Learning Engineer; Feedzai**
- Development and production maintenance of a model (Random Forest) for *Non-Disclosure Client* to detect online payment fraud within 5 countries. Dealed with datasets having tens of terabytes size (csv/json, parquet). Dealed with fast data (circa 300 transactions p/s peak) Model comparison between Random Forest, XGBoost and LightGBM. Creation of Model Performance Reports for client.
- Tasks:** Model Stability and Model variability Analysis; Developing in-house tools (faster data validation, exploration and model production monitoring); Feature Engineering; Benchmark model in production (recall, fpr, auc, others) & retrain; Model Monitoring; Data analysis to identify fraud attacks; Pipeline optimization; Label Management;
- 2016/06-2017/06** **Machine Learning Consultant; Altran Portugal**
- Development of a ML solution for short-circuit fault detection in Induction Motors. Dashboard for inference monitoring (R/Shiny). Model Inference module; Model Scoring service.
- Tasks:** ETL implementation for new data; EDA; Feature Extraction; Model Comparison (compared more than 10 models); Model Hyperparameter Tunning
- 2015/07-2016/03** **Software Engineering & Project Manager; Freelancer - Fluxphera**
- Development of a scalable Web App to access and manage of the online multiplayer Be First Game.
- Tasks:** Node.js fullstack; Scalable and auto deploy (AWS); Distributed state protocol for online game
- 2013/02-2014/09** **Software Developer; Safira**
- Development of a BPM unified platform for insurance claim management with legacy integration.
- Tasks:** Masterdata modeling; SQL Server Query Optimization; Backend and frontend dev (IBM BPM);
- 2011/07-2013/02** **Software Developer (part-time); GoBusiness Finance**
- Financial Fetcher of Stock Values to train a Neural Network (Maximus-AI).
- Tasks:** ETL of financial data with preprocess hooks to train the neural network;

Skills

Lang & Tools	Python, R, Git, Docker, k8s, bash, Java, C#, Node.js, react.js, Scala
Data Store & Query Engine	HDFS, PostgreSQL, Kafka, Parquet, Hive, Spark, Druid, Drill, Presto/Trino, KSQLDB, MySQL, Cassandra, Redis, Microsoft SQL
Data Viz	Plotly, Shiny, Ggplot2, echarts4r, Redash, Apache Superset, Metastore, Tableau, Kibana
DS Tasks	Classification, Labeled Evaluation, Blind Evaluation, Model Monitoring, EDA, Regression, Clustering
DS Models	Random Forests, XGBoost, LightGBM, SVM, Cubist, Variational AutoEncoder, Logit, LDA, K-NN, K-Means, NN
DS Lifecycle	Airflow, Mlflow, KFServing, Nuclio, OpenFaaS, BentoML, Seldon-Core, Kedro, DVC

Publications

2017-04	Stator Winding Short-Circuit Fault Diagnosis in Induction Motors using Random Forest; IEMDC
2017-05	Severity Estimation of Stator Winding Short-Circuit Faults using Cubist; EPIA

Teaching Experience

2019/09-2020/07	Teaching Assistance; Lusófona Universidade Teaching Assistance for the subjects of Multimedia Data Science and Artificial Intelligence.
2015/03-2015/05	Undergraduate Teaching Assistance; Nova Lisbon University, FCT
2016/03-2016/05	Scholarship in which I've been teaching programming principles with Matlab.

Education

2018/09-2019/01	Partial Post Grad, Analysis and Engineering of Big Data; Nova Lisbon University, FCT Multivariate Inference; Cluster analysis; Resampling and Confidence intervals; Optimization
2009/09-2013/07	BSc and MSc, Computer Science (17/20); Nova Lisbon University, FCT
2014/09-2017/05	Thesis (20/20): Machine Learning for On-line Detection of Stator Short-Circuit in Induction Motors
2020/10-2021/02	Apache Kafka Series(Kafka, Streams/KSQL, Connect, Schema); Udemy
2019/09-2019/10	Big Data for Data Engineers Specialization; Coursera
2019/09-2019/10	Apache Airflow; Udemy
2017/03-2017/08	Machine Learning Specialization; Coursera