

# Tiago dos Santos ▽ Data Science Engineer

Portugal, Lisbon • [santos.tmd@gmail.com](mailto:santos.tmd@gmail.com)

## Experience (6+ years)

- 2021/01-Present**      **Data Science Engineer; DefinedCrowd**
- Infrastructure setup for model serving and serverless functions. Implementation of pipelines for model serving with api for model monitoring and artifact tracking. Adapting model serving solutions for several internal teams' usage.
- Tasks:** Deployment of KFServing, Nuclio; Model deployment with CI/CD; K8s logging stream to elastic; Artifact versioning on cloud;
- 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**      **Data Science Engineer; Stratio**
- Development of models (vehicle battery discharged - Random Forest, tire pressure - Variational Auto Encoder); pipelines definitions for model deployment; infrastructure creation for the Stratio AI project.
- 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**      **Data Science Engineer; Feedzai**
- Development and production maintenance of a model (Random Forest) for *Non-Disclosure Client* to detect online payment fraud within 5 countries. Model comparison between Random Forest, XG-Boost 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**      **Data Science 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

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

## Publications

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

## Teaching Experience

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

## Education

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