

João Pereira

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25 years-old | Eindhoven, The Netherlands

Experience



FIOD
Belastingdienst

Data Scientist

Jan. 2020 — Dec. 2020

Belastingdienst

📍 Netherlands

Building an end-to-end deep learning product (PDEng final project):

- Designing, training, and deploying object detection and image classification models.
- Developing APIs to serve deep learning models.
- Developing a frontend (web application) for the end-users.

PDEng Candidate in Data Science

Jan. 2019 — Jan. 2021

Jheronimus Academy of Data Science

📍 Den Bosch, Netherlands

Developing data science projects for industry: (🔗 **Project Portfolio**)

- **Van Lanschot** | Detection of Suspicious Cases of Money Laundering.
- **ASML** | Unsupervised Particle Identification in Reticle Images.
- **TE Connectivity** | Recommendation System for Product Cross-Sell.
- **ASML** | Analyzing the Part Lifecycle in the Supply Chain Process.
- **Heijmans** | Prediction of Occupancy in Working Spaces.
- **Solar Scan** — An AI-powered Solar Potential Assessment Tool.

Lab Monitor

July 2019

Lisbon Machine Learning School

📍 Lisbon, Portugal

- Part of the organizing team of LxMLS'19.
- Helped the students solving the exercises during the lab sessions, implementing machine learning algorithms such as naive Bayes, HMMs, CRFs, RNNs, and reinforcement learning.

Researcher

Jan. 2018 — Dec. 2018

Institute for Systems and Robotics

📍 Lisbon, Portugal

- Developed applied machine learning research focusing on deep learning and applications to time series anomaly detection and representation learning.
- Publications (🔗 Scholar | Website)

Intern

Sept. 2017 — Nov. 2018

C-Side

📍 Lisbon, Portugal

- Developed my master thesis in partnership with C-Side on deep learning for anomaly detection in solar energy generation time series.

Intern

July 2017

EDP Group

📍 Lisbon, Portugal

- Developed a project on load forecasting using neural networks, within the Planning Department of EDP Distribuição.

Skills

Technical

- **Machine Learning:** Anomaly detection (my specialty), regression, classification, unsupervised learning.
- **Deep Learning:** CNNs, RNNs, Seq2Seq, attention, generative models, reinforcement learning.
- **Deployment:** Deployment of machine learning models through APIs and integration in web applications.
- **Applications:** anomaly detection, time series classification & forecasting, object detection, named-entity recognition.

Technologies

- **Languages:** Python, Matlab, R, C.
- **Frameworks:** TensorFlow, Flask, PyTorch, OpenCV, Scikit-learn.
- **Frontend:** JavaScript, Bootstrap, jQuery, HTML, CSS, D3.js.
- **MLOps:** Docker, Airflow, Git.
- **Databases:** SQL, NoSQL.
- **Cloud:** GCP, MS Azure.
- **Big Data:** Spark.

Languages

- Portuguese — Native.
- English — Fluent.
- French & Dutch — Beginner.

Personal

- Ability to communicate ideas and results to stakeholders of diverse backgrounds and roles.
- A lot of enthusiasm and energy for solving challenging problems.

JADS



Education



Professional Doctorate in Engineering (PDEng) in Data Science
Eindhoven University of Technology

Jan. 2019 — Jan. 2021
📍 Eindhoven, The Netherlands



Master & Bachelor in Electrical and Computer Engineering
Instituto Superior Técnico, University of Lisbon [GPA: 17/20]

Sept. 2013 — Nov. 2018
📍 Lisbon, Portugal



Exchange Student within Erasmus+ Programme
Université catholique de Louvain

Sept. 2016 — Jan. 2017
📍 Louvain-la-Neuve, Belgium

Publications [📄 Scholar](#) | [Website](#)

Unsupervised Anomaly Detection in Time Series Data using Deep Learning [Thesis Grade: 20/20]

Instituto Superior Técnico | Thesis developed in collaboration with C-Side.

M.Sc. Thesis

📍 Lisbon, Portugal

Unsupervised Anomaly Detection in Energy Time Series Data Using Variational Recurrent Autoencoders with Attention

17th IEEE International Conference on Machine Learning and Applications (Oral Presentation)

João Pereira & Margarida Silveira

📍 Orlando, Florida, USA

Learning Representations from Healthcare Time Series Data for Unsupervised Anomaly Detection

2019 IEEE International Conference on Big Data and Smart Computing (Oral Presentation)

João Pereira & Margarida Silveira

📍 Kyoto, Japan

Unsupervised Representation Learning and Anomaly Detection in ECG Sequences

International Journal of Data Mining and Bioinformatics

João Pereira & Margarida Silveira

Miscellaneous

Supervision/Coaching

- Introduction to Data Science course | 📄 Slides & Code | Nov'19 | 📍 Eindhoven, The Netherlands
- Data Science in Health Program | 📄 | Sept'19 | 📍 Den Bosch, The Netherlands

Invited Talks

- "Anomaly Detection with Variational Autoencoders", Deep Learning Sessions Lisbon meetup | 📄 Video | May'20
- "On Deep Learning", PDEng Data Science — JADS | 📄 Slides & Code | Oct-Nov'19 | 📍 Den Bosch, The Netherlands
- "Unsupervised Anomaly Detection", Signal & Image Processing Group - ISR | 📄 Slides | Oct'18 | 📍 Lisbon, Portugal

Reviewing and Program Committees

- Journals: IEEE Access; Wireless Communications and Mobile Computing (Wiley).
- Conferences: International Conference on Artificial Intelligence, Information Processing, and Cloud Computing; International Conference on Time Series and Forecasting; ALLDATA2020.

Summer Schools and Hackathons

- DeepFake Detection Challenge, United Nations Centre for Artificial Intelligence and Robotics | 2nd Hackathon for Peace, Justice, and Security | 📄 Slides & Code | Jun'19 | 📍 The Hague, The Netherlands
- 8th Lisbon Machine Learning School (LxMLS'18) | Jul'18 | 📍 Lisbon, Portugal.

Blog Posts

- Introducing Solar Scan — an AI powered solar potential assessment tool. 📄

Distinctions

Diploma for Academic Merit/Excellence

Instituto Superior Técnico

{2014/2015, 2015/2016, 2016/2017, 2017/2018}

📍 Lisbon, Portugal