João Pereira

Data Science Lead at adidas
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Experience

adidas   Amsterdam, The Netherlands
Data Science Lead, Content Intelligence   From Jan 2024
- Leading the development of machine learning solutions that provide better experiences to millions of users across adidas .com and App.
- Providing guidance to Data Scientists, enabling their growth.
- Supporting global hiring initiatives across Europe, India, and Latin America.

Technical Lead, Demand Forecasting   Jan 2023 - Dec 2023
- Led data science and engineering developments in demand forecasting products that enable better buying, planning, and product trading for adidas' eCom.
- Provided technical leadership to a team of 5-7 Data Scientists and Machine Learning Engineers.
- Led innovation project on using graph neural networks for demand forecasting ↗.

Data Scientist, Demand Forecasting   Mar 2021 - Dec 2022
- Built demand forecasting models and deployed them to production on AWS SageMaker.
- Championed software engineering best practices, elevating technical standards.

Eindhoven University of Technology   Eindhoven, The Netherlands
Engineering Doctorate Candidate in Data Science   Jan 2019 - Feb 2021
- **Belastingdienst**: Developed object detection and image classification models and created an app.
- **ASML**: Developed computer vision models that detect dust particles on silicon wafers.
- **Van Lanschot**: Created graph analyses that help in detecting money laundering.
- **TE Connectivity**: Built a recommender system for parts based on matrix factorization and a UI.
- **ASML**: Analyzed the part's lifecycle in the supply chain process using process mining.
- **Heijmans**: Created a neural network model for predicting occupancy in working spaces.
- **Gemeente Den Bosch**: Developed rooftop segmentation models for solar potential assessment.

Institute for Systems and Robotics   Lisbon, Portugal
Student Researcher   Jan 2018 - Dec 2018
- Conducted applied deep learning research on time-series anomaly detection using generative models.

EDP Group   Lisbon, Portugal
Intern   Jun 2017
- Developed neural network models to forecast the power load across hundreds of substations.

Education

Eindhoven University of Technology   Eindhoven, The Netherlands
Engineering Doctorate, Data Science   2019-2021
- Thesis topic: Large-scale object detection and image analysis | Grade: 9.5/10

Instituto Superior Técnico   Lisbon, Portugal
Masters and Bachelors, Electrical and Computer Engineering   2013-2018
- Thesis topic: Anomaly detection in time series data using deep learning | Grade: 20/20

Université Catholique de Louvain   Louvain-la-Neuve, Belgium
Exchange Student   2016

Selected Publications (300+ citations. See more on Google Scholar.)

- N. Kozodoi, L. Zinovyeva, S. Valentin, J. Pereira, R. Agundez, **Probabilistic Demand Forecasting With Graph Neural Networks** [↗], Turin, Italy, ECML-PKDD'23 (ML4ITS).
- J. Pereira, M. Silveira, **Unsupervised Anomaly Detection in Energy Time Series Data Using Variational Recurrent Autoencoders With Attention** [↗], Orlando, USA, ICMLA'18.
- J. Pereira, M. Silveira, **Learning Representations From Healthcare Time Series Data for Unsupervised Anomaly Detection** [↗], Kyoto, Japan, BigComp'19.
- J. Pereira, M. Silveira, **Unsupervised Representation Learning and Anomaly Detection in ECG Sequences** [↗], IJDMB'19.

Skills

- Languages: Python, SQL, Matlab, C.
- Machine Learning Stack: PyTorch, Transformers, NumPy, Scikit-learn.
- Cloud: AWS and Databricks.
- Data Processing: Spark, Pandas, and Polars.
- Personality: A lot of enthusiasm and energy for solving challenging problems.

Talks

- adidas, Fueling the adidas Digital Business Through Data Science and AI . . . . Jun 2024
- adidas, Improving Product Findability Through Automated Product Tagging . . . . . Apr 2024
- ECML-PKDD'23, Probabilistic Demand Forecasting With Graph Neural Networks [↗] . Sep 2023
- Tech Summit, adiFormer: A Large Language Model for Generating Product Copies . . Sep 2023
- AWS, Fast and Scalable Hyperparameter Tuning and Cross-Validation in SageMaker [↗] Mar 2023
- adidas, Enabling Trading Excellence Via Fortuna's Pre-season Forecasts . . . . Jul 2022
- adidas, In-season Demand Forecasting With DeepAR . . . . Sep 2021
- Deep Learning Sessions Lisbon, Anomaly Detection With Variational Autoencoders [↗] . May 2020

Trainings

- Coaching and Developing Employees . . . . Jul 2024
- LLMOps Workshop, AWS, Herzogenaurach, Germany . . . . Nov 2023
- Manager Development Experience, adidas [↗] . . . . Jun - Dec 2022
- AWS Distributed Training and MLOps, AWS, London, United Kingdom . . . . Sep 2022
- AWS SageMaker Inference, AWS . . . . Sep 2022