Diogo Ferreira

Data Scientist/Backend Engineer

Diogo Daniel Soares Ferreira
24 years old
Vagueira, Vagos
Portugal Driving License – Class B
Fluent in Portuguese and English

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Languages

Python ★★★★

Java ★★★★

Elixir ★★

C/C++ ★★

Matlab ★★

Go ★

R ★

Hi! I'm Diogo Ferreira and I love to use technology to solve daily life problems. I have a special interest in the areas of Machine Learning and Software Architectures, although I am ready to deal with any Software Engineering related problem.

I am also passionate about nature and music, being member of the Portuguese Scouts (CNE) and having attended several music summer festivals in the past years.

Experience

June 2020 -

Backend Engineer

Talkdesk (Remote)

Using Java with Quarkus framework to build and monitor data-driven services.

September 2019 – May 2020

Data Scientist

Talkdesk – TDX Coimbra

Design, implementation and test of NLP machine-learning based techniques to help agents in contact centers to improve the customer experience. Working with sentence embeddings, document similarity, word extraction from text and other NLP topics.

March 2019 – August 2019

Student Researcher

Instituto de Telecomunicações – Aveiro

Study and development of machine learning models for time series prediction metrics in 5G slices, using Deep Learning techniques. Design and implementation of a distributed real-time architecture to forecast anomalies and act on the network to improve the quality of service. The project was developed in the Network Architectures and Protocols (NAP) group, having as mentor the Prof. Dr. Susana Sargento.

July 2018

Summer Internship

Critical Software – Coimbra

Summer Innovation Week – Developing a platform for monitoring the noise and the temperature in the Critical Software open-spaces.

April 2018 – September 2018

Undergraduate Student Researcher

Instituto de Telecomunicações – Aveiro

Study of intelligence mechanisms in the core of a 5G network for monitoring, optimization and security. The project was developed in the Network Architectures and Protocols (NAP) group, having as mentor the Prof. Dr. Susana Sargento.

October 2017 – March de 2018

Undergraduate Student Researcher

Instituto de Telecomunicações – Aveiro

Continuation of a project made in a third-year course ("Project in Informatics Engineering"), in partnership with *Altice Labs*, having as main goal to develop a platform with support for management, monitoring, alerts and actuation over the data of a city, in real-time (*smart city*).

The project was developed in the Network Architectures and Protocols group (NAP), having as mentor the Prof. Dr. Susana Sargento.

On the scope of the project, I had the opportunity to go to events as exhibitor, like *Techdays '17, Symposium 2017 CMU (Carnegie Mellon University) Portugal* or *Sharing Cities – Lisbon.*

July 2016 – August 2016

Summer Internship at Aptoide

Lisboa

R&D department - Design and build a software with the purpose of finding apps on the Aptoide Store with explicit content (nudity) using Machine Learning techniques.

Education

2014 - 2019 **Integrated MSc in Computer and Telematics Engineering**

Aveiro University

Finished with a grade of **18.21**, being the best student of the course finishing in 2018/2019, having a dissertation grade of **20**/20 and having received a merit award.

2011 - 2014 **Science and Technology course (10th – 12th grades)**

Gafanha da Nazaré High School

Finished with an average grade of **17**.

Publications

Prediction of Low Accessibility in 4G Networks
Diogo Ferreira, Carlos Senna, Paulo Salvador, Luís Cortesão, Cristina Pires, Rui Pedro, Susana Sargento
Annals of Telecommunications, 2021

A Forecasting Approach to Improve Control and Management for 5G Networks
Diogo Ferreira, André Braga Reis, Carlos Senna, Susana Sargento
IEEE Transactions on Network and Service Management, February, 2021
DOI: 10.1109/TNSM.2021.3056222

Distributed Real-time Forecasting Framework for IoT Network and Service Management
Diogo Ferreira, Carlos Senna, Susana Sargento
IEEE/IFIP Symposium Network Operations and Management (NOMS), Budapest, Hungary, April, 2020
DOI**:** 10.1109/NOMS47738.2020.9110456

Root Cause Analysis of Reduced Acessibility in 4G Networks
Diogo Ferreira, Carlos Senna, Paulo Salvador, Luís Cortesão, Cristina Pires, Rui Pedro, Susana Sargento
Machine Learning for Networking. MLN 2019. Lecture Notes in Computer Science, vol 12081. Springer, Cham
DOI: 10.1007/978-3-030-45778-5_9

Breaking Text-Based CAPTCHA with Sparse Convolutional Neural Networks
Diogo Daniel Ferreira, Luís Leira, Petya Mihaylova, Petia Georgieva
IbPRIA 2019: Pattern Recognition and Image Analysis pp 404-415
DOI: 10.1007/978-3-030-31321-0_35

Major relevant skills

- Experience in the implementation and testing of **NLP** algorithms, such as TF-IDF, LDA, word embeddings, sentence embeddings, document similarity and word extraction
- Experience in problem resolution using **Machine Learning techniques** and state-of-the-art **Deep Learning** techniques, with frameworks like PyTorch, Keras or Scikit Learn
- Experience in small and medium project management in a multidisciplinary team using **Agile** techniques
- Experience using **Reactive Java** to build data-driven microservices using test-driven methodologies
- Experience using **Apache Camel** to implement applications using Enterprise Integration Patterns
- Experience using **Elasticsearch** as operational database for text-oriented products
- Experience in event-driven architectures using micro-services and associated tools, such as **Kafka** or RabbitMQ (message queues), distributed databases and similar tools
- Experience in usage of **web frameworks**, such as Django, Quarkus, Spring Boot, Phoenix/Elixir or Falcon
- Experience in **data analysis** problems using data manipulation and visualization tools such as NumPy, SciPy, Matplotlib, Jupyter, Pandas and similar
- Experience in **MLOps** tools, such as MLFlow, DVC, Sagemaker, and others

Social skills

- Instructor in *Data Science Academy* from *Talkdesk*, in which I taught the *Deep Learning* module
- Volunteer in *Conta Connosco* project: a *pro bono* initiative where volunteers share their professional experiences with the aim of helping unemployed or young people in their careers
- Part of scouts (Corpo Nacional de Escutas) for 12 years, where I was guide of my team and secretary/treasurer; currently, I am a scout leader
- Currently part of the juvenile choral group at the Oliveira do Bairro
- I also did sports since I was 5 years old, playing Football/Futsal in several teams until I was 18 years being team captain on several occasions

All these experiences brought me bigger sense of responsibility, leadership, team spirit, punctuality and assiduousness.

Interests

In my free time I love doing online courses. Here are some that I did:

- Deployment of Machine Learning Models - Udemy
- The Ultimate Hands-On Hadoop – Tame Your Big Data! – Udemy
- Machine Learning – Coursera
- Deep Learning Specialization – Deep Learning.AI
- CS224n: Natural Language Processing with Deep Learning - Stanford University

Beyond the digital world, I am also passionate about music, having attended several music summer festivals in the past years. I also enjoy sports, mainly football.

In my free time I also enjoy posting in online platforms (personal website, Medium, Dev.to) about software engineering and machine learning, reading books and attend events related to informatics, technology and programing, like JNation 2020, DSPT Day 2019, National Meeting of Informatic Engineering Students (ENEI 2019 and ENEI 2018), TechDays (2017) and Talk a Bit (2017), DSPT meetups among others.