# VASCO NEVES, PH.D.

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# **DATA SCIENTIST**

### Proven aptitude for rapid learning, analytical thinking, and problem-solving. Recognize data trends and unique insights to drive business creativity.

Versatile and adaptable professional with extensive experience in data science and research, utilizing analytical, statistical, and numerical tools in Python and R to extract valuable insights from data. Thorough knowledge in machine learning and artificial intelligence covering supervised, unsupervised, and reinforced learning. Skilled in statistical inference, hypothesis testing, Bayesian statistics, and generalized regression. Looking forward to apply data science techniques to innovative and data-driven companies.

## Core Competencies

Data Science & ML/AI, Statistical/Numerical Modeling, Process Optimization, Data visualization, Python (numpy, scipy, scikit-learn, keras, statsmodels, matplotlib) & R, Critical thinking, Strategic Planning & Execution, Creative Problem Solving, Project Management

# Professional Experience

# 2021 to 2024 • UNIVERSIDADE DE AVEIRO - IBIMED / DEPARTAMENTO DE CIÊNCIAS MÉDICAS • Aveiro, Portugal DATA SCIENTIST RESEARCHER

Engage in scientific research using data science techniques within the realm of medical sciences, including developing innovative tools for personalized medicine, and contributing to population studies.

- Leveraged expertise in Genome Wide Association Studies (GWAS) pipelines to calculate Polygenic Risk Scores (PRS), a promising method of identification of common diseases and traits in the human population.
- Evaluated the reliability of 100 different methods for PRS calculation, concluding on their lack of reliability as a stratification tool that was cited over 240 times

# 2020 to 2021 • ASSOCIAÇÃO PORTUGUESA DE EDUCAÇÃO AMBIENTAL • Aveiro, Portugal

## PROJECT COORDINATOR

Served as the Project Lead in the creation of a WebSIG platform in 6 different cities, facilitating collaborative mapping initiatives using applied statistics and data science principles, based on air quality and noise monitoring campaigns to gather valuable environmental data.

- Developed a strategic proposal to secure 50k€ in funding from Fundo Ambiental for a noise and air quality collaborative mapping.
- Led the development of low-cost, open-source sensors for air quality measurements using 3D design tools, 3D printers, and ESP32 boards to be used on the fixed and mobile continuous air quality monitoring in schools and cities. 86 different mobile measurements were made in the short timeframe of the program, between 19/10/2020 and 13/11/2020.
- Successfully guided the publication of 6 papers from student-generated data, with the primary objective of raising awareness and advocating for public measures addressing environmental concerns, an effort which included 149 students and 26 teachers.
- Authored an e-book on best practices in collaborative mapping activities distributed for free in the educational community, with an estimated reach of 500 students.

#### 2016 to 2019 • INSTITUTO FEDERAL DO PARANÁ • Foz do Iguaçu, Brazil RESEARCH PROJECT LEAD

Led research projects as lead in the realm of open-source hardware, overseeing technological initiatives:

- Telescope dome automation: when completed became available to the scientific and student community enabling faster and more precise tracking of celestial objects. The project was published and presented in events.
- 3D Printer. An open-source 3D printer was developed, published, presented and offered to the wider IFPR community to be used for free to create objects for other projects.
- A high-precision plastic extruder was developed using parts build by the 3D-printer that in turn could make filament for the 3D printer from recycled plastic. The project was published and presented at a IFPR event where it was awarded best project.
- Mentored 4 physics students who collaborated in the described projects in their first experience in research.
- Served as the Physics course coordinator at IFPR in 2018.

# VASCO NEVES

# 2014 to 2015 • CNPQ-MCT • Natal, Brazil

# SENIOR RESEARCHER / DATA SCIENTIST

Conducted advanced studies on planet host M stars utilizing data science tools to advance the field towards more precise measurements on planet detection and stellar parameters.

- Secured a competitive 60k€ Young Talents Grant from the Brazilian Ciência Sem Fronteiras program from a compelling research proposal on M dwarf stars and their exoplanets.
- Demonstrated project execution competence resulting in the publication of 11 research papers. Highlights:
  - The observation of the first atmospheric spectrum of GJ4370b, a Neptunian planet, which is featureless in the infrared, despite having "blue skies". This discovery was the result of the combination between RV and transit techniques.
  - The ongoing HARPS planet search program (2014-2015) yielded 1 Uranus mass planet, 2 Neptune mass planets, and 2 Super-Earth mass planets.
  - A new refined technique to obtain metallicity and temperature of M-dwarf stars was devised, setting precise validity boundaries for the mentioned parameters as well as an activity limit above which the technique is no longer valid.
  - Served as a referee in peer-reviewed astrophysics magazines improving the quality of the research output of the community.

#### 2009 to 2013 • Centro de Astrofísica da Universidade do Porto • Porto, Portugal RESEARCHER / DATA SCIENTIST

# Researcher focusing on M dwarf stars and their exoplanets, using data science methodologies to analyze and model data. Worked in 3 different countries with three distinct languages and cultures: Portugal, France, and Chile.

- Published 11 articles, including the co-authorship of the discovery of the first Earth type planet in the Habitable Zone of a Mdwarf star via the Radial Velocity technique using the HARPS high-resolution spectrograph @ La Silla Observatory in Chile.
- Tripled the precision of measurement for planetary radius and density by developing a novel statistical method for calculating temperature and metallicity.

# Education

Doctor Of Philosophy (Ph.D.), Astronomy • Universidade do Porto/Université Joseph Fourier (Grenoble I) Master of Science, Physics • Universidade de Aveiro Bachelor of Science Degree, Physics • Universidade de Aveiro

# **Professional Development**

Data Science professional Certificate • Data Science Infinity

Micromasters, Statistics and Data Science • MITx

# Postgraduate Degree, Clinical Trials • Faculty of Medicine of the University of Lisbon

# Technical skill competency

Python (Packages: NumPy, SciPy, Statsmodels, Pandas, Matplotlib, Seaborn, Scikit-Learn), R, Time Series Analysis, Supervised/Unsupervised Machine Learning, A/B Testing, MATLAB, Fortran, Office Suite.

# Exploratory Technical Skills

Python packages: Plotly, Cufflinks, Keras, Tensorflow, Pytorch, apyori, causalimpact), R packages: Tidyr, Car, Ae, Dpblyr, Plyr, Rdd, Modelr, Statmod, Ggplot2, Cowplot, Curl, Dplyr), Causal Impact Analysis, Model Deployment, Deep Learning, SQL, Tableau, Github, Docker, Digital Fab. (3D CAD Design, 3D Scanning, 3D Printing, CNCs, Electronic Circuit Design & Circuit Making, IoT device programming, networking, and communication), Embedded Programming (Arduino and ESP32),

# Language skills

- Portuguese native tongue
- English proficient user (C2+)
- French Independent user (A2-B1)
- Spanish Basic user (A2+)