Curriculum Vitæ - João Galego

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I am a certified Physics nerd and an amateur forensic scientist with a keen interest in challenging problems with real-world applications. Over the years, I've worked as a data analyst, software tester, test automation engineer, DevOps engineer and ML consultant for several companies, in areas ranging from market research to fiber optic telecommunications and mobility. Currently, I work as a DevOps engineer and ML consultant at the Siemens Lisbon Tech Hub, while pursuing a PhD degree in Cognitive Science at Universidade de Lisboa. My research focuses on the application of ML algorithms to improve the performance of EEG-based brain-computer interfaces.

PROFESSIONAL EXPERIENCE

Siemens — 2019 – Present
`DevOps Engineer / ML Consultant`

- Cloud solutions architect and administrator for 10+ applications running on AWS and Azure
- Lead contributor to 200+ Ansible roles, Terraform modules and Docker images
- Organized workshops and trainings on DevOps, AI/ML and quantum computing
- Performed technical assessment in 20+ interviews
- Supervised 10+ interns and trainees
- Junior member of the IT Key Experts program (Data-driven Enterprise & Augmented Intelligence)
- SITEX class of 2021 working on Industrial Edge platforms and applications
- Member of DI IT Architecture Guild

Innowave — 2017 – 2019
`DevOps Engineer`

- Designed and implemented test frameworks and automated tests for multiple projects and customers
- Organized internal and customer-oriented workshops and trainings on CI/CD, DevOps and test automation
- Served as technical writer and reviewer working together with software architecture teams

Coriant — 2014 – 2017
`Test Automation Engineer`

- Increased test automation coverage by 5-fold in less than 2 years
- Managed a Jenkins cluster with 20+ build agents

EDUCATION

Universidade de Lisboa — 2017 – Present
`PhD Cognitive Science`

- **Title:** *From Thought to Action - Machine Learning Techniques for Processing Electrophysiological Signals in Brain-Computer Interfaces*
- **Advisors:** Prof. Hugo Ferreira (IBEB/FCUL), Prof. Arlindo Oliveira (INESC/IST)
- **Keywords:** brain-computer interfaces, EEG, biosignal processing, riemannian classification, deep learning

Instituto Superior de Ciências Sociais e Políticas — 2016 – 2017
`PgD Forensic Studies`

Instituto Superior Técnico — 2008 – 2013
`MSc Physics`

- **Title:** *Flavour Aspects of Multi-Higgs Models* | **Grade:** 19/20
- **Advisors:** Prof. Gustavo Castelo Branco (CFTP/IST)
- **Keywords:** standard model, CP violation, discrete groups, flavour symmetries, multi-Higgs doublet models

Certifications

AI Product Manager Nanodegree   2021
`Udacity`

Course on how to develop AI products that deliver business value, organized in collaboration with Appen.

Self-Driving Car Engineer Nanodegree   2021
`Udacity`

Autonomous driving course covering several topics in computer vision, sensor fusion, localization, path planning, control and systems integration, organized in collaboration with Waymo and Mercedes-Benz.

AWS Certified Machine Learning - Specialty   2020
`Amazon`

Specialty exam to assess the candidate's ability to design, implement, deploy, and maintain ML solutions.

Fundamentals of Digital Marketing   2020
`Google`

Intro to digital marketing course accredited by Interactive Advertising Bureau Europe and The Open University.

Microsoft Certified Azure Fundamentals (AZ-900)   2020
`Microsoft`

Azure certification covering fundamental cloud concepts, Azure services, Azure workloads, security and privacy in Azure, as well as Azure pricing and support.

Associate Android Developer   2018
`Google`

Entry-level exam that includes a coding project and exit interview, covering topics related to app functionality, UI and data management, as well as debugging and testing of Android apps.

Certified Jenkins Engineer   2016
`Cloudbees`

Official certification covering core Jenkins concepts, Pipeline and Jenkins administration fundamentals.

Machine Learning   2014
`Coursera`

Introductory MOOC on machine learning taught by Andrew Ng.

Technical Skills

Disclaimer: *This list is neither extensive nor exhaustive by design. As a firm believer in the "right tool for the right job" mindset, I've had the chance to work with hundreds of tools, packages and frameworks throughout my career. Listing them all here would be cumbersome and, worse, uninformative. Please contact me directly if you wish to discuss specific technical skills.*

Hands-on experience with multiple public cloud providers (AWS, Azure, Google Cloud).

Working knowledge of multiple programming and scripting languages:

- **Proficient** - Java, Python
- **Professional Use** - C++, C#, Go, Groovy, JavaScript, Lua, MATLAB, Ruby

- **Academic Use** - C, Coq, Haskell, Lisp, Prolog, R, Wolfram Mathematica

Expert knowledge of multiple DevOps tools:

- **Automation** - Ansible, Packer, Terraform, Vagrant
- **CI/CD** - Azure DevOps, GitLab CI, Jenkins
- **Containerization** - Docker, Kubernetes
- **Logging & Monitoring** - Elastic (ELK) Stack, Grafana
- **Package Management** - JFrog Artifactory
- **Secrets Management** - HashiCorp Vault
- **Virtualization** - VirtualBox, VMware

Extensive experience with common Python packages for scientific computing (NumPy, SciPy), data analysis (Pandas) and differentiable programming (PyTorch, MXNet, TensorFlow 1.x and 2.x), NLP modules (Gensim, NLTK, spaCy, TextBlob), and high-level ML frameworks (HuggingFace Transformers, Keras, Scikit-Learn).

Expert knowledge of data and ML engineering tools and frameworks:

- **Data & Model Versioning** - DVC
- **Data Exploration** - Jupyter Notebook
- **Data Processing** - Airflow, Hadoop, Spark 2.x and 3.x
- **Data Visualization** - Dash
- **Feature Storage** - Amazon SageMaker Feature Store, Feast
- **ML Platforms** - Dataiku, Kubeflow
- **Model Interpretability** - Alibi, Lucid
- **Model Lifecycle** - MLflow
- **Model Serving** - BentoML, TensorFlow Serving, TorchServe
- **Model Monitoring** - Evidently, Neptune
- **Optimization Tools** - Mahout
- **Simplification Tools** - Hermione, Ludwig
- **Visual Analysis and Debugging** - Manifold, Netron, Yellowbrick

HONORS & AWARDS

IBM QGSS21 Certificate of Quantum Excellence   2021

IBM

Two-week intensive quantum computing summer school organized by the IBM Qiskit team with a focus on quantum machine learning. Quantum excellence certificates were issued to those who completed *all* graded lab work assignments with a final cumulative score above 75%.

For more information, check out the official announcement on the IBM research blog.

IBM Quantum Challenge - Advanced, 1st Place   2021

IBM

Quantum computing hackathon organized by IBM to celebrate the 40-year anniversary of the *Physics of Computation* conference, and 5-year anniversary of IBM Quantum.

Exercises included factoring small integers with Shor's algorithm, running spectroscopy experiments against *real* IBM Quantum systems (w/ exclusive access to the brand new `IBMQ Jakarta`) using Qiskit Pulse and determining the ground state energy of small molecules (H_2, LiH) using VQE.

For more information, check out the official announcement on the IBM research blog.

Udacity Technology Scholarship - AI Track   2021
`Udacity / Bertelsmann`

Full scholarship to attend Udacity's AI Product Manager nanodegree.

QHack 2021 QML Challenge - Top 50   2021
`Xanadu / AWS`

Quantum machine learning hackathon hosted by AWS and Xanadu.

For more information, read my *QHack Recap - PennyLane, Amazon Braket and Beyond* article on Medium.

SITEX 2021 - Industrial Edge, 1st Place   2021
`Siemens`

Bring simulation (Tecnomatix® PlantSim) and optimization (Simcenter HEEDS) to the factory floor and low code platforms (Mendix) to the Industrial Edge landscape as part of a strategic development program for the innovation and technology community in the Siemens hemisphere.

AI@Sustainability Hackathon - Technical Excellence (Team Mobility)   2020
`Siemens`

Built an application in collaboration with *Swiss Federal Railways* (SBB) and based on Amazon SageMaker to predict the *traffic volume* and *modal split* for a specific weather constellation and time based on a large set of real-world data points.

Associate Android Developer Fast Track Program Scholarship   2016
`Google / Udacity`

Full scholarship to attend Udacity's fast track course and take the Associate Android Developer exam.

Junior Research Scholarship   2013
`Fundação para a Ciência e Tecnologia (FCT)`

Scholarship for undergraduate students to work at the *Center for Theoretical Particle Physics* (CFTP).

LANGUAGES

`Deutsch` (elementary proficiency), `English` (full professional proficiency), `Español` (professional working proficiency), `Français` (professional working proficiency), `Italiano` (elementary proficiency), `Português` (native)