CURRICULUM VITÆ - JOÃO GALEGO

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I am a certified Physics nerd and an amateur sleuth with a keen interest in challenging problems with real-world applications. Over the years, I've worked as a data analyst, software tester, DevOps engineer and ML consultant for several companies, in areas ranging from market research and finance to fiber optic telecommunications and mobility. Currently, I work as a **Solutions Architect** at Amazon Web Services (AWS), while pursuing a PhD in Cognitive Science at ULisboa. My research focuses on motor cognition and the application of robust signal processing and machine learning (ML) techniques to improve the performance of EEG-based brain-computer interfaces (BCI).

PROFESSIONAL EXPERIENCE

Amazon Web Services (AWS)   2022 – Present
Solutions Architect, Startups

- Work directly with strategic Startup customers to accelerate their challenging, mission-critical projects
- Recommend best-practice architectures in line with long-term business outcomes
- Create and share best practices, technical content and new reference architectures through white papers, code samples and blog posts
- Evangelize and educate about AWS technology through workshops, user groups, meetups, public speaking events, online videos and conferences
- Contribute to SA organizational growth by interviewing candidates and participating in hiring decisions
- Develop areas of depth in technical domains relevant to your interests and your customer's outcomes
- Collaborate within the startup ecosystem (accelerators, incubators, VCs and meetups) to educate startups and support their growth

EDGE Digital Lab   2020 – Present
Research Collaborator, Part-Time

- Research initiative focused on the development and deployment of solutions for well-being, performance, longevity, and health based on exponential digital technologies such as Artificial Intelligence (AI), Augmented and Virtual Reality (AR/VR), 3D Printing, Blockchain, 5G, Cloud, Internet of Things (IoT), neuroprosthetics, and more.

Siemens   2021 – 2022
Lead ML Engineer

- Member of Siemens Financial Services' Artificial Intelligence and Automation (SFS IT&CYS AIA) chapter
- Development lead of robust ML solutions in an international and interdisciplinary DevOps team
- Senior subject-matter expert (SME) on ML technology at scale, deep learning (DL) and natural language processing (NLP)
- Reponsible for deploying models into production while ensuring the highest standards in data integrity
- Responsible for implementing processes and systems for ML model lifecycle management

Siemens   2019 – 2021
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

Wintrust/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/Infinera   2014 – 2017
`Test Automation Engineer`

- Member of the System Verification team for Optical Network Design & Planning tools
- 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

(*) On hold due to personal reasons as of December 2021

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

AWS Partner: Cloud Economics Accreditation   2022
`Amazon`

Earners of this badge are AWS Partners who have demonstrated knowledge of cost savings and data center economics in relation to cloud computing.

Machine Learning Engineering for Production (MLOps) Specialization 2021
`DeepLearning.AI`

Multi-course specialization on how to *productionize* ML applications, organized in collaboration with DeepLearning.AI and the Google TensorFlow team.

Natural Language Processing (NLP) Specialization 2021
`DeepLearning.AI`

Multi-course specialization on how to design NLP applications that perform such tasks as sentiment analysis and language translation, organized in collaboration with DeepLearning.AI and the Google TensorFlow team.

Google Data Analytics Professional Certificate 2021
`Google`

Multi-course certificate program on how to collect, transform, and organize of data in order to draw conclusions, make predictions, and drive informed decision-making.

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, Vaex) and differentiable programming (JAX, MXNet, PyTorch, TensorFlow 1.x and 2.x), NLP modules (Gensim, NLTK, spaCy, TextBlob), and high-level ML frameworks (HuggingFace Transformers, Keras, Scikit-Learn, Trax).

Expert knowledge of data and ML engineering tools and frameworks:

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

QHack 2022 QML Challenge - Top 70 (*)
2022
`Xanadu`

Quantum machine learning hackathon hosted by Xanadu and multiple sponsors.

Won 400$ in credits for AWS and access to an IBM Quantum's 7-qubit device.

(*) Due to conflicting engagements, participation in the Coding Challenge was only active during the 1st week.

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.

Google Cloud Hero: BigQuery - Analytics & Machine Learning - 1st Place
2021
`Google / Siemens`

Invite-only event organized by Google Cloud and hosted by the Google Siemens Account team. Google Cloud Hero is a *gamified* 3h training experience using hands-on labs focused on BigQuery and BigQuery ML.

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.

Won 250$ in credits for AWS and early access to an alpha version of Sandbox@Alphabet's Floq simulator - a quantum SaaS API built on top of TPUs.

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)