

CURRICULUM VITÆ - JOÃO GALEGO

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print('Hi there!') 🙋 My name is <redacted>, I'm 0x20 yo, and I live in <redacted>. I am a Physics nerd 🇺🇸 and an amateur sleuth 🕵️ with a penchant for solving challenging problems with real-world applications 🌍. I've worn many hats 🎩 data analyst, software tester, DevOps engineer and Machine Learning (ML) consultant and god knows what else. On a good day, I see myself as a jack of all trades, master of some 🦄. Currently, I am a Solutions Architect at AWS, helping Startups in every stage of their cloud journey 💡🎯🚀🧠. I also lead a double life as a PhD candidate in Cognitive Science at ULisboa, where my research focuses on motor cognition 🏃🧠 and brain-machine interfaces (BMI) 🧠🔌. I love fixing the unfixable, building the impossible and learning new things along the way. When I'm not working or studying, you can usually find me browsing the local bookstore 📖, competing in hackathons or enjoying some quality family time 👨‍👩‍👧.

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
- AWS GameDay organizer, operator, maintainer and supporter
- Full member of the AI/ML TFC focused on MLOps
- Full member of the AI/ML Community of Practice (CoP)
- Aspiring member of the AI/ML Lynx team
- AI/ML Heroes program graduate
- GenAI ambassador + expert
- Inclusion ambassador

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)

- Responsible 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:** motor cognition, brain-computer interfaces, biosignal processing, machine 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 Certified Database - Specialty

2023

Amazon

Specialty-level exam to assess the candidate's comprehensive understanding of databases, including the concepts of design, migration, deployment, access, maintenance, automation, monitoring, security, and troubleshooting.

Oxford Machine Learning Summer School

2022

AI for Global Goals

ML summer school with dedicated tracks for ML x Finance and ML x Health organised by AI for Global Goals in partnership with the University of Oxford's Deep Medicine and CIFAR and sponsored by DeepMind and GSK.

Startup School

2022

Y Combinator

7-week course featuring live talks by YC partners, founder stories by YC alumni, in-person meetups at YC offices all over the world, co-founder matching, and the largest community of startup founders on the internet cf. Announcing Startup School 2022 for the official announcement.

AWS Certified Solutions Architect - Associate

2022

Amazon

Associate-level exam to assess the candidate's ability to design and build secure, high-performing, cost-effective, highly available, and scalable solutions based on customer requirements.

Migration Ambassador Foundations (Business)

2022

Amazon

Earners of this badge are individuals who have demonstrated the foundational business knowledge about AWS Cloud Migration and the AWS Programs to support a customer's migration to the AWS Cloud.

AWS Partner: Accreditation (Technical)

2022

Amazon

This accreditation provides AWS Partners with fundamental, technical knowledge of AWS cloud computing, global infrastructure, services, common solutions, migration, security, and compliance.

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.

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|---|------|
| 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-level 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#, Dart (Flutter), Go, Groovy, JavaScript, Lua, MATLAB, Ruby

- **Academic Use** - C, Coq, Haskell, Lean, 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 and Diffusers, Keras, Scikit-Learn, Trax).

Expert knowledge of data and ML engineering tools and frameworks:

- **AutoML** - AutoGluon, AutoKeras NNI
- **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 Serialisation** - ONNX
- **Model Serving** - TensorFlow Serving, TorchServe Triton Inference Server
- **Model Monitoring** - Evidently, Neptune
- **Optimization Tools** - Dask, Mahout
- **Simplification Tools** - Hermione, Ludwig
- **Visual Analysis and Debugging** - Manifold, Netron, Yellowbrick

HONORS & AWARDS

IBM Quantum Challenge - Advanced, 1st Place

2023

IBM

Quantum computing hackathon organized by IBM Quantum dedicated to dynamic circuits.

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

Hugging Face 🤗 Deep Reinforcement Learning Course - Certificate of Excellence

2023

Hugging Face

Online course organized by Hugging Face covering beginner- to expert-level topics on Deep RL. Certificates of excellence were issued to all participants that passed **all** assignments before the end of April 2023.

For more information, check out the official announcement on the Hugging Face 🤗 blog.

IBM Quantum Challenge - Advanced, 1st Place

2022

IBM

Space-themed, quantum computing hackathon organized by IBM Quantum.

Exercises included an exploration of primitives using the new Qiskit Runtime, applying error mitigation techniques like matrix-free measurement mitigation (M3) to ML problems involving quantum kernels, implementing problem-specific parameterized quantum circuits to solve the traveling salesman problem, and the application of quantum chemistry techniques to study the interstellar medium by computing the reaction energy of H_3^+ , the first excited state and dipole moment of C_3H_2 (Cyclopropenylidene), and the interstellar chain reaction energy of $C + C_2H_2 \rightarrow C_3H_2$.

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

Machine Learning University - AutoGluon - Top 10

2022

AWS

Internal AutoGluon competition promoted by Machine Learning University (MLU) as part of the *AutoGluon: Beyond the Basics* workshop - the goal was to create a model for binary classification on a multimodal setting (image, text, and tabular data).

Machine Learning University - GML - Top 10

2022

AWS

Internal graph machine learning (GML) competition promoted by Machine Learning University (MLU) as part of the accelerated GML track - the goal was to create a model to identify whether a chemical compound (represented as a graph) is *mutagenic* in nature or not cf. graph classification on MUTAG for additional information.

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.

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|---|------|
| 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 <i>QHack Recap - PennyLane, Amazon Braket and Beyond</i> article on Medium. | |
| SITEX 2021 - Industrial Edge, 1st Place | 2021 |
| Siemens | |
| Created an application that brings 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 based on Amazon SageMaker in collaboration with <i>Swiss Federal Railways</i> (SBB) 🚆 to predict the <i>traffic volume</i> and <i>modal split</i> 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 <i>Center for Theoretical Particle Physics</i> (CFTP). | |

TALKS & EVENTS

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|---|------|
| Machine Learning for Medicine and Healthcare | 2019 |
| 12th Workshop on Biomedical Engineering (WBME) | |
| An overview of what ML actually is, highlighting some of its applications to the health sector - from the rise of expert systems in the 80s to the diagnosis, prognosis and treatment of COVID-19 - how it is shaping the present and how it may one day decide our future. Slides are available here | |
| How to solve common business challenges with AI/ML | 2022 |
| AWS Initiate Portugal 2022 | |
| L200 talk featuring Sérgio Casaleiro (Software Development Manager at Ryanair Labs) on how to leverage the AWS ML Stack to solve common business problems and move an AI-powered application from PoC to production in no time. | |
| Amazon SageMaker for Startups | 2022 |
| AWS Experience Madrid on Floor 11 | |
| L300 talk on how to use Amazon SageMaker to manage the entire MLOps pipeline at scale - from data exploration and feature engineering to model deployment and monitoring - with a focus on cost optimization. | |

LANGUAGES

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