



# Curriculum Vitae: Armando Vieira, PhD

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## Professional Summary

An accomplished Data Science Director with extensive experience leading complex data initiatives and building high-performing data science teams. My focus is on leveraging advanced AI technologies to solve business challenges, drive strategic decision-making, and create a significant impact. With a strong background in data-driven leadership while being fully hands-on, I specialize in aligning scientific expertise with business strategy to ensure that data science initiatives deliver measurable business value.

I have co-founded two startups and have a strong entrepreneurial spirit, which allows me to be both a visionary and an executor. I am also an author of two books ("Business Applications of Deep Learning" (2018) and "Thinking Machines: The Rise of AI and its Impact on society and Economy" - to be released 2025. Have had the privilege of speaking at TEDx and several major conferences, where I've shared my passion for the transformative power of AI.

## Key Skills and Competencies

- **Leadership and Strategic Vision:** Proven success in setting data strategy, managing teams, and ensuring alignment between data initiatives and business objectives.
- **Team Building and Mentoring:** Extensive experience in hiring, mentoring, and developing high-performing data science teams.
- **AI and Machine Learning Expertise:** In-depth experience with deep learning, Bayesian statistics, predictive modeling, and AI bias mitigation.
- **Business Acumen and Product Development:** Skilled in translating business goals into data-driven initiatives that directly impact the bottom line. Expertise in working with cross-functional teams to bring data products to market.
- **Communication and Stakeholder Management:** Effective communicator able to articulate complex technical solutions to non-technical stakeholders, driving buy-in and ensuring alignment.

## Academic Experience

- **Tartu University - Professor Artificial Intelligence Aug 2024 - Present** Responsible and lecture on Business Data Analytics.
- **Associate Professor, Universidade Lusófona, Lisboa:** 2022–2025  
Teaching advanced machine learning algorithms to Master's students in Data Science, with an emphasis on practical applications of machine learning and statistical modeling.
- **Full Professor, Instituto Superior de Engenharia do Porto (ISEP):** 2000–2010  
Taught undergraduate courses in Physics and contributed to the development of the Biomedical Engineering degree.
- **PhD Supervision:** Advisor for two PhD theses:
  - *"Large Language Models in Legal Reasoning and Applications"* (2023 -), Universidade Lusófona, Research focused on the integration of LLMs in legal analysis and decision-making.
  - *"Neural Networks for Ion Beam Analysis"* (2005-2009) – Universidade de Lisboa, Study on the application of neural networks to enhance ion beam data processing and material characterization.

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- **PhD Jury Member:** Served as a jury member for the evaluation of a PhD thesis "SVMs for Natural Language Processing".

## Programming and Software Skills

- **Languages & Tools:** Advanced Python, R, Matlab, SQL, Keras, TensorFlow, PyTorch, Amazon Sagemaker, Hugging Face Transformers, OpenAI GPT, LangChain, Docker
- **Expertise Areas:** Prompt Engineering, Deep Learning, Bayesian Networks, Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs), Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Autonomous AI Agents, Graph Neural Networks (GNNs)
- **Domain Knowledge:** Statistical Analysis, Complex Systems, Pattern Recognition, Natural Language Processing (NLP), Computer Vision, Speech Processing, Agentic AI Systems, AI Safety and Ethics, Model Interpretability, Scalable AI Systems, AI for Scientific Discovery

## Selected Professional Experience

**Tartu University - Professor Artificial Intelligence** **Aug 2024 - Present**

Responsible and lecture on Business Data Analytics.

**Medgical - Co-founder and Chief Data Scientist** **Sep 2023 – Present**

- Architecting and overseeing the development of end-to-end AI pipelines for healthcare operations, integrating multimodal data sources including EHRs, medical imaging, and clinical notes.
- Designing and deploying large language model (LLM)-based agents for autonomous processing of medical documentation, appointment triage, and real-time patient query handling.
- Aligning technical architecture with strategic business outcomes, contributing to investor engagement, regulatory compliance strategy, and product-market fit refinement.

**Vamstar - Senior Data Scientist** **Jul 2022 - Aug 2023**

- Developed algorithms for price prediction of pharmaceutical products to optimize supply chain decisions.
- Contributed to the data science strategy, focusing on improving model accuracy and ensuring compliance with industry standards and worked closely with cross-functional teams to develop AI-driven solutions for the pharmaceutical industry.

**Ydata.ai - Consultant AI** **Dec 2021 - Jun 2022**

- Provided consulting services for implementation of generative models for complex time-series data, helping clients harness the power of synthetic data and privacy-enhancing technologies.
- Collaborated with data teams to design and develop innovative machine learning models, with a focus on mitigating bias and enhancing data quality.

**Hazy.com - Head of Data Science** **Jan 2019 - Nov 2021**

- Led a data science team in developing and deploying synthetic data generation models, enhancing data privacy while mitigating AI bias.
- Defined the strategic direction for AI capabilities and aligned technical work with business goals to ensure high ROI. Oversaw the inclusion of Hazy in the Crunchbase list of the most promising AI companies in 2022.

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## Contract Roles — Data Science & AI Applications 2017–2019

- **Tesco – Data Scientist (Contractor):** Used Dynamical Bayesian Networks to predict stock levels in supermarkets, achieving cost savings of €10M in stock routines.
- **British Telecom – Data Scientist (Contractor):** Applied Machine Learning algorithms to analyse and optimize information flow and user behaviour.
- **Direct Line – Deep Learning Specialist:** Collaborated in a cross-functional team applying deep learning to medical image and video segmentation with time-dependent CNNs, contributing to healthcare innovation.
- **MainAd (Italy) – Retargeting Marketing Project Manager:** Designed and led an LSTM-based system to optimize digital campaigns, integrating AI with DSP platforms and improving marketing KPIs.
- **Contextvision (Sweden)** Collaborated in a cross-functional team to apply deep learning algorithms to medical images and videos segmentation with time dependent CNNs, contributing to advancements in healthcare technology.

## BUPA Insurance, London - Lead Data Scientist 2015 - 2016

- Built and led a data science unit, developing innovative data strategies that transformed BUPA Insurance into a data-driven organization. Focus areas included customer experience, risk management, and marketing.

## RedZebra Analytics / Closer - Chief Data Scientist 2012 - 2015

- Directed the development of customer behavior prediction tools using banking transactional data, leading to better customer segmentation and marketing alignment.
- Developed and scaled models, contributing to an increase in profitability through predictive accuracy.

## Instituto Superior de Engenharia do Porto (ISEP) - Full Professor of Physics 2000 - 2011

- Taught undergraduate courses in Physics, contributing to the education of future engineers.
- Assisted in the development of the Biomedical Engineering degree at ISEP in 2007.
- Coordinated and secured funding for 2 National Research Projects from FCT with budget 450 000 Euros.

## Education

- **PhD in Theoretical Physics**  
University of Coimbra, approved with distinction
- **MSc in Physics & Engineering of Plasmas**  
Nuclear Fusion Centre, Lisbon, 17/20
- **BSc in Physics**  
Instituto Superior Técnico, Lisbon, 15/20

## Key Achievements

- **Public interventions:** Author of the book "Business Applications of Deep Learning" (Apress, 2018). Speaker at TEDx and major data science conferences, including PyData and EARL.
- **Entrepreneurship:** Co-founded three startups (Sairmais, Eduke.me and Medgical), demonstrating a keen ability to innovate and execute in dynamic environments.

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- **Publications:** Over 160 publications in refereed international journals and peer-reviewed conference proceedings, with an **h-Index:** of 32 and **i10-Index:** 53.

## Training Courses Given

- **Programming with Artificial Intelligence** - Tecnico Mais, IST Lisbon, 2024
- **Artificial Intelligence for Bioinformatics**, Universidade Pompeu Fabra, Master class, 2020.
- **Generative Adversarial Neural Networks (GANs) for Insurance** - Generali, Italy, 2018
- **Retargeting Ad Optimization with LSTMs** - MainAd, Italy, 2017
- **Nuclear Radiations for Operators of Experimental Nuclear Reactors** - ITN Lisboa, 1999

## Membership

- (ISO)- member of ISO international technical committee on Artificial Intelligence Safety
- (IEEE) - Senior member of IEEE society.

## Languages

- **Portuguese** (Native)
- **English** (Fluent)
- **Spanish** (Fluent)
- **French** (Intermediate)

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