

Clara Matos

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EXPERIENCE

SWORD Health

Porto, Portugal

Director of Applied AI

2025 - Present

Head of Applied AI

2022 - 2025

Lead AI Engineer

2019 - 2022

- Hiring, mentoring and scaling the Applied AI team from 3 to 20+ members; currently leading 3 sub-teams.
- Established the technical strategy and operating model that enables consistent delivery of production-grade AI features.
- Post-training (SFT/RLHF/RLAIF) of LLMs on anonymized proprietary health data, optimized to maximize clinical outcomes.
- Built Gondola, a human-feedback platform powering evaluation cycles.
- Designed and launched the 10+ AI features behind the AI Feed, Sword's core care-management system that supports clinical decision-making, engagement, and administrative workflows, supporting scale without compromising quality of care.
- Built [Phoenix](#), a clinically safe, context-aware, and engaging voice agent (built by combining STT, LLM and TTS models) that guides therapy sessions and sustains member engagement.
- Created the AI Care Coordinator, which independently resolves 60% of incoming member support tickets across email, chat, and SMS.
- Co-organized and presented at the [Sword AI Summit](#) in 2024, with 700+ attendees.
- Co-inventor of 2 [patents](#).

Senior Algorithms Engineer

2017 - 2019

Algorithms Engineer

2015 - 2017

- Developed human motion tracking and analysis models that have already powered 7M+ AI Care Sessions.
- Created an application to debug algorithms with offline data, used for evaluating updates and supporting production issues.
- Built a data analytics platform to assess the performance of motion tracking and analysis models in production to track quality metrics over time to guide improvements prioritization.
- Co-inventor of 10 [patents](#).

INESC-TEC

Porto, Portugal

Research Assistant

Feb 2015 - Sep 2015

- **Master Thesis:** Human Motion Analysis in Video Sequences for Telerehabilitation Systems.
- Final Score: 18/20.
- Developed a skeleton tracking system using as input point clouds generated from stereo images.
- The skeleton positions were identified using pixel-wise body part labeling by training a Random Decision Forest.
- The detection accuracy was improved by using kinematic and temporal constraints.
- Tools: OpenCV, PCL

Politecnico di Milano

Milan, Italy

Research Trainee

Mar 2014 - Jul 2014

- **Project:** Dynamic modeling of the body surface.
- Evaluation of the deformation of the skin in the elbow articulation during its movement.
- Project under a collaboration between CARTCASLab and the Department of Aeronautics and Astronautics of MIT for the development of the BioSuit.

EDUCATION

OxML

Virtual

Oxford Machine Learning Summer School

August 2021

[OxML](#) offered 70+ hours of lectures including 12 hours of ML fundamentals and 58 hours of advanced topics in ML theory

Faculdade de Engenharia da Universidade do Porto

Master's degree in Bioengineering - Biomedical Engineering

Porto, Portugal

Sep. 2010 – Sep. 2015

Relevant coursework: Computer Aided Diagnosis, Biomedical Image Analysis, Algorithms and Data Structures, Information Systems Engineering, Signals and Electronics, Physiological Signal Processing.

SELECTED PATENTS

A. Matos, D. Gonçalves, D. Paços, V. Bento, J. Pereira, F. Rodrigues, I. Gabriel. "Personalized recommendations in a digital therapy platform." US20250273351A1, February 2024.

For the complete list of 10+ patents, see [here](#).

SELECTED TALKS

[How We Are Building Phoenix, an AI Care Agent](#), InfoQ Dev Summit Munich, October 2025.

[Lessons Learned From Shipping AI-Powered Healthcare Products](#), QCon London, April 2025.

Lessons Learned From Shipping AI-Powered Healthcare Products, Sword AI Summit, November 2024.

exp(AI): Growing an AI culture amidst exponential growth, Data Makers Fest, October 2023. [\[Video\]](#)

STUDENTS AND MENTORSHIP

Co-advised M.Sc. theses, Faculdade de Engenharia da Universidade do Porto:

[Machine Learning Improvements to Human Motion Tracking \(2020\)](#) – Pedro Ribeiro

[Human Motion Analysis Using Inertial Sensors for Rehabilitation Purposes \(2018\)](#) – Beatriz Oliveira

[Gait Analysis and Rehabilitation using Inertial Sensors \(2017\)](#) – Patrícia Loureiro Rodrigues

INDEPENDENT COURSEWORK

Generative AI with Large Language Models, DeepLearning.AI, Coursera, 2024

Machine Learning Data Lifecycle in Production, DeepLearning.AI, Coursera, 2023

Structuring Machine Learning Projects, DeepLearning.AI, Coursera, 2023

Machine Learning Engineering for Production (MLOps) Specialization, Coursera, 2021

Full Stack Deep Learning, 2021

MIT 6.041 Probabilistic Systems Analysis and Applied Probability, MIT, 2020

MIT 6.S191, Introduction to Deep Learning, MIT, 2020

COMS W4995 Applied Machine Learning, Columbia, 2020

Mathematics for Machine Learning: Specialization, Coursera, 2020

MIT 18.06 Linear Algebra, MIT, 2019

CS229 Machine Learning, Stanford, 2019

Machine Learning, Stanford, Coursera, 2019

Algorithms Part I and II, Princeton, Coursera, 2019

OPEN SOURCE CONTRIBUTIONS

[scikit-learn](#): See my [contributions here](#).

TECHNICAL SKILLS

Programming: Java, Python, SQL, OOP, TDD

Data & ML: Pandas, NumPy, SciPy, scikit-learn, TensorFlow, TFX, unsloth, LangChain, LangGraph

ML Practices: LLMs, Evaluation, Data Science / Machine Learning / Deep Learning, MLOps, A/B Testing

Frameworks & Tools: FastAPI, Pydantic, Git, DVC, Great Expectations

Cloud & Infrastructure: Azure, GCP, Docker, Kubernetes

Core Foundations: Algorithms, Linear Algebra

LANGUAGE SKILLS

Portuguese: Native speaker. English: Fluent. Italian: Basic.

INTERESTS

Reading, Traveling, Hiking, Music Festivals

Last updated: 20 September 2025