

Profile

9 March 2023

Nuno A. C. Henriques

nunoachenriques.net

Information architect, engineer,
scientist, and strategist towards
efficient innovation!

Developing socially conscious opportunities to creatively apply Sensory AI and more. A broad experience of 20 years coding search engines, architecting information systems, engineering databases, Cloud, Web, and mobile development integrations. Also, on robotics software on GPS-based navigation, live video human face detection, and IoT (mobile) sensors' data acquisition. Bridging state-of-the-art algorithms and techniques during the PhD thesis research towards automated machine learning, explainable, and efficient predictions in context regarding human emotional valence changes.

Achievements (PhD) A novel automated machine learning (AutoML) platform efficiently predicting human emotional valence in geolocation and time context. Available as a secure Cloud service.

Achievements (Tourism of Portugal) (a) one order of magnitude data centre power reduction; (b) while increasing processing and storage; (c) digital transformation from paper to Web apps towards entrepreneurs; (d) coached and lead by example on pursuing more knowledge and qualifications for better delivery; (e) tourism rose several GDP percentage points during our watch.

1 Activity (relevant)

Cognitive Innovation Lead

Axians. January 2022–December 2022

A disruptive strategist delivering life-centred innovation driven by science and technology.

Devising technological architecture, data strategy, and fostering competences with the state-of-the-art best practices for a brave new and sustainable AI world.

Co-Founder // Chief Science and Technology Officer

Unsettled. March 2021–November 2021

We are disruptive strategists delivering innovation driven by science and technology.

We provide fractional CxO services: several clients and projects, from solo entrepreneurs to public sector agencies. Devising technological architecture, and data strategy, towards a safer and sustainable future while growing with ethics.

Chief Artificial Intelligence Officer

MettaNoon. September 2020–September 2021

Developing socially conscious opportunities to creatively apply Sensory AI and more.

Chief Technology Officer

Dengun. January 2021–June 2021 (November–December 2020 Head of Engineering, R&D)

A strategic partnership to pave the way for Dengun's future intelligence in digital products.

PropTech Start-up Advisor

Unlockit. August 2020–January 2021

As an advisor, I provide technological advice, mentoring, and future perspectives.

PhD student, researcher, and engineer

BioISI — Ciências/ULisboa. 2012–2013, 2016–2020.

IT Architect and Software Engineering Consultant

Instituto de Medicina Molecular. Medicina/ULisboa. September 2013–March 2015.

IT Architect and Software Engineering Manager

Tourism of Portugal. Lisbon, Portugal. April 2009–March 2011.

2 Academic history (relevant)

PhD in Cognitive Science at Universidade de Lisboa. PhD's thesis entitled "SensAI+Expanse Prediction of Emotional Valence Changes on Humans in Context by an Artificial Agent Towards Empathy" (four-year research, ULisboa grant May 2016–April 2019, Approved with Distinction by unanimous decision). Advanced Studies course (first-year lectures, grade: 16/20). Lisbon, Portugal. 2012–2013, 2016–2020.

MSc in Informatics Engineering at FCT/NOVA. Master's thesis entitled "MovieGene: A multimedia production system using Evolutionary Computation", advisors: Luís Correia (Ciências/ULisboa) and Nuno Correia (FCT/NOVA). Two-year degree. Grade: 17/20 (first-year lectures); "Very Good" (second-year dissertation, top grade by unanimous decision). Lisbon, Portugal. 2005.

3 Projects (relevant)

COVID-19 PIRA | <https://gitlab.com/nunoachenriques/covid-19-pira> | Compute a custom ad hoc personal risk and ranking metric of the regions affected by the COVID-19 disease. This is based on the assumption that active cases are exponentially relevant, reduced by the recovered ones, and increased by lack of detection tests, and all relative to population total. | Debian GNU/Linux; Python (`bs4`, `numpy`, `pandas`, `requests`); Apache HTTP server + uWSGI + Flask; Docker | May 2020.

SensAI+Expanse | <https://gitlab.com/nunoachenriques/sensei-expanse> | Towards an artificial empathetic companion to humans. Using an Android application as a PhD research tool to enable emotional valence prediction in context (space and time). The agent resources (e.g., machine learning, storage) are Cloud-expanded (private Cloud; 1-year Google Cloud Platform). | Android (Java, XML); Debian GNU/Linux; Python (`hdbscan`, `matplotlib`, `numpy`, `pandas`, `psycopg2`, `scikit-learn`, `scikit-optimize`, `tensorflow`, `xgboost`); PostgreSQL; Apache HTTP server + Flask | August 2017–.

INTROBOT | Patent: EP2874037A2 (2015-05-20) | A new multipurpose robot with autonomous and human operated navigation and surveillance capabilities. Mixed reality interface and algorithms to trail and track with camera feed and GPS map. | Ubuntu GNU/Linux; ROS; OpenCV; C++; Qt; JavaScript; Google Maps; GPS; Live RT video camera | August 2011–September 2012.

TP Service Bus | Tourism of Portugal applications' hub. Critical for the organisation to assure proper interoperability between applications' services towards an agile dashboard. | Debian GNU/Linux; PostgreSQL; Java; WSO2 ESB; REST; SOAP | July 2010–March 2011.

Entitas | Temporal (past, present, and future aware using PostgreSQL `infinity` special value), limitless and shared database of unique entities (companies and persons) assuring proper interoperability between applications entities and associated contacts. | Debian GNU/Linux; PostgreSQL; Java; WSO2 AS; Apache HTTP server | September 2009–March 2011 (Tourism of Portugal), 2014–2015 (IMM).

TP IT Architecture and Engineering | Assuring proper governance and interoperability between applications. Department portfolio encompass tens of projects and several platforms including OutSystems Agile, Oracle IAM, WSO2 SOA. Re-engineering the data centre and applications technology architecture to assure energy efficient use with less resources' usage footprint. | Blades; Virtual servers; Central storage; Fault tolerance; Documentation management; Debian GNU/Linux; Nagios; ... | April 2009–March 2011.

Business Intelligence | Data indicators for top-level management. | Pentaho; Tomcat; PostgreSQL; Plone/Zope; Java; Python; XML | September 2008–July 2009.

MovieGene | A multimedia production system using Evolutionary Computation. | Java 1.5 (JMF, Threads, AWT and Swing). ECJ 12 evolutionary library. | 2004–2005.