

Profile

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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)

Chief Artificial Intelligence Officer

MettaNoon. September 2020–

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

PropTech Start-up Advisor

Unlockit. August 2020–

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

Information Systems Unit (*USI*) — Instituto de Medicina Molecular. Medicina/ULisboa. September 2013–March 2015.

IT Architect and Software Engineering Manager

Department of Technology (*DT*) — 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 Faculdade de Ciências e Tecnologia / Universidade Nova de Lisboa. 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.

Graduation in Informatics Engineering at Faculdade de Ciências e Tecnologia / Universidade Nova de Lisboa. Five-year degree. Grade: 14/20. Lisbon, Portugal. 2002.

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.

NOVA Portal (incl. several sub-sites) | New Web platform. | Plone/Zope; Python; XHTML+CSS; Bash; REST | January 2006–July 2009.

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

HICOD2000 | ESA | Project Engineer and Quality Manager. | C++; PHP; JPEG2000; Bash | September 2004–March 2005.

EO-KES | ESA | Project Manager and Research Engineer. | Java; Protégé; WordNet; XHTML+CSS | September 2003–December 2003.

SPID | Concept, development and maintenance of FCT/NOVA Web pages search engine. | Java (*multi-threaded*); PostgreSQL; PHP; XHTML+CSS | 1998–2002.