Nahuel Costa Cortez
Artificial Intelligence researcher

Contact

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Research interests

Prognostics and health management
Decision Making Modeling
Explainable AI
Deep Learning

Core Competencies

Problem formulation
Critical thinking
Organization
Open-mindedness

Computer Skills

Proficient with Python,
Java,
C++,
C,
Matlab,
LaTeX

Links

NahuelCostaCortez
nahuel-costa-cortez
mrdKa3EAAAAJhl=es

Languages

English and Spanish

Education

PhD Artificial Intelligence	University of Oviedo	**2020-2023**
MA Computer Science	University of Oviedo	**2019-2020**
BA Computer Science	University of Oviedo	**2015-2019**

Research Experience

Lecturer — University of Oviedo **February 2021-Now**
Computer Science Department
Languages and computer systems

Visiting Researcher — University of Montpellier **May-July 2023**
Laboratoire d'informatique, de robotique et de microélectronique de Montpellier
Research and development of medical diagnostic methods based on emission tomography images

Visiting Researcher — University of Hawaii at Manoa **May-August 2022**
Hawaii Natural Energy Institute
Research and development of Machine Learning tools for the diagnosis and prognosis of lithium-ion batteries

Special Session Organizer — Milano **2022**
International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems
Organized special session on Machine Learning for Partially Labeled Data

Research technician — University of Oviedo **2019-2021**
Metrology and Modeling Lab
Development of computational health models for the treatment of rechargeable batteries

Research intern — University of Oviedo **2019-2020**
Metrology and Modeling Lab
Analysis of intracardiac electrocardiograms for the prediction of cardiovascular diseases

Publications

Journal articles

Data-driven direct diagnosis of Li-ion batteries connected to photovoltaics
Matthieu Dubarry, **Nahuel Costa**, *Dax Matthews*
Nature Communications (2023), DOI: 10.1038/s41467-023-38895-7

Simplified models of remaining useful life based on stochastic orderings
Luciano Sánchez, **Nahuel Costa**, *Inés Couso*
Reliability Engineering System Safety (2023), DOI: 10.1016/j.ress.2023.109321

Remaining Useful Life Estimation Using a Recurrent Variational Autoencoder
Nahuel Costa, *Luciano Sánchez*
Logic Journal of the IGPL (2022)

Li-ion battery degradation modes diagnosis via Convolutional Neural Networks
Nahuel Costa, *Luciano Sánchez, David Anseán, Matthieu Dubarry*
Journal of Energy Storage (2022), DOI: 10.1016/j.est.2022.105558

RUL-RVE: Interpretable assessment of Remaining Useful Life
Nahuel Costa, *Luciano Sánchez*
Software Impacts (2022), DOI: 10.1016/j.simpa.2022.100321

Nahuel **Costa Cortez** , Phd candidate in Artificial Intelligence

Variational encoding approach for interpretable assessment of remaining useful life estimation
Nahuel Costa, *Luciano Sánchez*
Reliability Engineering System Safety (2022), DOI: 10.1016/j.ress.2022.108353

Semi-Supervised Recurrent Variational Autoencoder Approach for Visual Diagnosis of Atrial Fibrillation
Nahuel Costa, *Luciano Sánchez*
IEEE Access (2021), DOI: 10.1109/ACCESS.2021.3064854

Graphical Analysis of the Progression of Atrial Arrhythmia Using Recurrent Neural Networks
Nahuel Costa, *Jesús Fernández, Inés Couso, Luciano Sánchez*
International Journal of Computational Intelligence Systems (2020), DOI: 10.2991/ijcis.d.200926.001

Conference and workshop papers

Weakly supervised learning of the motion resistance of a locomotive powered by liquefied natural gas
Luciano Sánchez, Pablo Luque, Daniel Álvarez-Mántaras, José Otero, **Nahuel Costa**
International Workshop on Soft Computing Models in Industrial and Environmental Applications (SOCO), 2022, Salamanca, Spain, DOI: 10.1007/978-3-031-18050-7$_5$9

Informed Weak Supervision for Battery Deterioration Level Labeling
Luciano Sánchez, **Nahuel Costa**, *David Anseán*
International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU), 2022, Milano, Italy, DOI: 10.1007/978-3-031-08974-9$_5$9

Explainable condition monitoring from imprecise information
Nahuel Costa, *Luciano Sánchez*
Conference of the Spanish Association of Artificial Intelligence (CAEPIA), 2021, Málaga, Spain

Remaining Useful Life Estimation Using a Recurrent Variational Autoencoder
Nahuel Costa, *Luciano Sánchez*
International Conference on Hybrid Artificial Intelligence Systems (HAIS), 2021, Bilbao, Spain, DOI: 10.1007/978-3-030-86271-8$_5$

Graphical analysis of the progression of atrial arrhythmia through an ensemble of Generative Adversarial Network Discriminators
Nahuel Costa, *Jesús Fernández, Inés Couso, Luciano Sánchez*
Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT), 2019, Praga, Czech Republic, DOI: 10.2991/eusflat-19.2019.78

Teaching Experience

Lecturer   University of Oviedo **2022-2023**
Introduction to programming, Algorithmics, Business Inteligence
Bachelor's Degree in Computer Engineering in Information Technology
Algorithmics
Bachelor's Degree in Data Science
Operating Systems (EN)
Bachelor's Degree in Software Engineering

Lecturer   University of Oviedo **2021-2022**
Algorithmics
Bachelor's Degree in Data Science
Operating Systems (EN), Databases
Bachelor's Degree in Software Engineering
Introduction to programming, Algorithmics
Bachelor's Degree in Computer Engineering in Information Technology

Lecturer   University of Oviedo **2020-2021**
Operating Systems (EN), Databases, Programming Methodology (EN)
Bachelor's Degree in Software Engineering

Awards

Mobility Fellowship   University of Oviedo **2022**
Regional competition (€3,400)

Second best thesis project - Doctoral Consortium   Conference of the Spanish Association of Artificial Intelligence **2021**
For the thesis project "Explainable condition monitoring from imprecise information"

Best master's thesis project   University of Oviedo **2020**
For the project "Diagnosis of Atrial Fibrillation by intelligent analysis of intracardiac of recordings"

Mentee   IMFAHE **2019**
Chosen as one of the 10 students selected from the University of Oviedo to participate in the professional and academic development
programs of excellence promoted by the International Mentoring Foundation for the Advancement of Higher Education (IMFAHE).
Mentored by Dr. Francisco Costela, researcher at Schepens Eye Research Institute, Harvard Medical School.

Master Fellowship   Principado de Asturias **2019**
Full tuition scholarship (€2,000)

Most innovative Idea   EbIC University Awards **2019**
For the project "Preprocessing and intelligent treatment of intracardiac electrocardiograms" (€400)

Best undergraduate thesis project   University of Oviedo **2019**
For the project "Pre-processing and intelligent treatment of intracardiac electrocardiograms"

Santander CRUE CEPYME Scholarship   Banco Santander **2018**
Internship in IT related companies - Bytacora Soluciones Informáticas

Undergraduate Fellowship   Spanish Government **2015-2019**
Full tuition scholarship (€2,000/yr) and stipend (€3,000/yr) for 4 years

Reviewing

Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU)   **2022**
Reviewed three conference submissions

IEEE Journal of Biomedical and Health Informatics   **2021**
Reviewed one journal article

International Journal of Approximate Reasoning   **2021**
Reviewed one journal article

The Journal of supercomputing   **2021**
Reviewed one journal article

Courses

Peer Reviewer Course   Online **2022**
Elsevier

Identify and train your research talents   Online **2021**
University of Oviedo

Convolutional Neural Networks in Tensorflow   Online **2021**
DeepLearning.AI

Natural Language Processing in TensorFlow	Online **2021**
DeepLearning.AI	
Sequences, Time Series and Prediction	Online **2021**
DeepLearning.AI	
Quarter Course in Professional Development	Online **2020**
IMFAHE	
How to present a scientific communication	Online **2021**
University of Oviedo	
Practical Deep Learning for Coders, v3	Online **2019**
FastAI	
Android development from scratch	Online **2019**
Udemy	

Certifications

Certified Peer Reviewer

Professional Certificate
TensorFlow Developer

Elsevier Reviewer
Certificate

Certificate in Advanced
English

Other Experience

Software Developer, Internship	Gijón, Spain **2018**
Bytácora Soluciones Informáticas	
Development of a help desk ticketing system - Enterprise Resource Planning (ERP) – Odoo modules – Pycharm – Python – XML	
Software Developer, Internship	Gijón, Spain **2018**
PSWService	
Web app development – Ionic – AngularJS (HTML5, CSS, Javascript) – PHP	