

André Pacheco | Curriculum Vitae

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Education

- **Federal University of Espírito Santo** **Vitória, Brazil**
Ph.D., Computer Science, Supervisor: Prof. Dr. Renato A. Krohling Aug 2016 – Nov 2020
Thesis: Combining heterogeneous data and deep learning models for skin cancer detection
- **Dalhousie University** **Halifax, Canada**
Visiting Graduate Research Student, Supervisor: Prof. Dr. Thomas Trappenberg May 2019 – Feb 2020
Research project: Out-of-distribution detection methods applied to skin cancer classification
- **Federal University of Espírito Santo** **Vitória, Brazil**
Ms.C., Computer Science, Supervisor: Prof. Dr. Renato A. Krohling Sep 2014 - Jul 2016
Ms.C. thesis: Aggregation of neural classifiers via Choquet integral with respect to a fuzzy measure
- **Federal University of Espírito Santo** **Vitória, Brazil**
B.S., Computer Engineering Mar 2009 – Aug 2014
Undergraduate Program in Computer Science and Electrical Engineering
B.S. Thesis: Designing a fuzzy controller using differential evolution applied to a line follower robot

Professional Experience

- **Federal University of Espírito Santo (UFES)** **Vitória, Brazil**
Assistant Professor Jul 2022 - Now
 - My main responsibility is to teach and advise students in research projects
 - I'm leading the Padtech project at PAD-UFES
 - I'm an Associate Professor of the Postgraduate Program in Computer Science
 - I'm leading the Health AI Lab (LIFE)
- **Samsung Electronics** **Campinas, Brazil**
Artificial Intelligence Researcher Specialist | AI R&D Lab Aug 2020 - Jul 2022
 - My main responsibility was to work on the development of Artificial Intelligence / Machine Learning algorithms to improve Samsung devices
 - I worked on projects that demanded sensor data analysis, prediction, and classification for health applications, in particular, for environments with very limited resources such as smartwatches
 - I also contributed to a multimedia project to reduce noise in photos from smartphones
 - I was a mentor to Jr. R&D learners in the Samsung Academy program
 - I helped to design and deploy a machine learning model that is in production in Galaxy Watch devices around the world
 - My project was rewarded with the Silver Award in the Samsung Best Paper Award 2022
- **Sharespot Inc** **Vitória, Brazil**
Software Engineer Jan 2016 - Jan 2017
 - I worked with a team that designed and developed web-based systems using mainly Java and Angular for interactive marketing solutions

- **Padtec S/A** **Vitória, Brazil**
Software Engineer - Intern *Feb 2013 - Jan 2014*
 - I worked with a team that designed a software simulator to optical transport network (OTN) in C++.
- **Núcleo de Cidadania Digital - NCD** **Vitória, Brazil**
IT analyst - Intern *Feb 2011 - Mar 2012*
 - I worked with a team that provided IT help desk to computers based on Linux distributions.

Research Experience

- **AI Health Lab. (LIFE) at UFES** **Vitoria, Brazil**
Leading Researcher *Feb 2023 – Now*
 Working with AI/ML models applied to Health and Medical Imaging.
- **AI R&D Lab - Samsung Research Institute Brazil (SRBR)** **Campinas, Brazil**
AI Research Engineer *Aug 2020 – Jul 2022*
 Working with AI/ML models to allow new health/well-being solutions for wearable devices.
- **Hierarchical Anticipatory Learning Lab. (HALLab), Dalhousie University** **Halifax, Canada**
Visiting Graduate Research Student with Prof. Dr. Thomas Trappenberg *May 2019 – Feb 2020*
 Worked with Prof. Dr. Thomas Trappenberg and Prof. Dr. Sageev Oore on dynamic weights for an ensemble of deep models and out-of-distribution detection applied to medical data.
- **Bio-inspired Laboratory (LABCIN), Federal University of Espírito Santo** **Vitória, Brasil**
Ph.D. student with Prof. Dr. Renato A. Krohling *Aug 2016 – Nov 2020*
 Worked with Prof. Dr. Renato A. Krohling and Profa. Dra. Patricia Lyra Frasson on deep learning applied to skin cancer detection and interpretability/explainability.
- **Optimization laboratory (LabOtim), Federal University of Espírito Santo** **Vitória, Brasil**
Ms.C. student with Prof. Dr. Renato A. Krohling *Sep 2014 – Jul 2016*
 Worked with Prof. Dr. Renato A. Krohling on aggregation algorithms applied to an ensemble of classifiers
- **Robotic Laboratory, Federal University of Espírito Santo** **Vitória, Brasil**
Undergraduate research student with Profa. Dra. Roberta L. Gomes *Jun 2012 – Feb 2014*
 Worked with a team of students led by Profa. Dra. Roberta L. Gomes to develop algorithms and hardware to educational robots.

Awards, Honors, and scholarships

- **2025:** Highly Ranked Scholar - Prior 5 Years in the Skin Cancer field by ScholarGPS
- **2025:** *Conexão Inova* Awards finalist
- **2024:** *Inoves* Awards finalist
- **2023:** WebMedia LF Prize finalist
- **2021:** Silver award at the Samsung Best Paper Award (SBPA) 2021 in the Bio & Health track
- **2020:** Best paper award at ISIC @ CVPR 2020
- **2020:** FAPES travel awards to CVPR 2020

- **2019:** Travel awards NeurIPS 2019
- **2019:** 3rd place (out of 16 teams) in the International Skin Imaging Collaboration challenge - ISIC 2019 task 2.
- **2019:** 4th place (out of 64 teams) in the International Skin Imaging Collaboration challenge - ISIC 2019 task 1.
- **2018:** The State of Espírito Santo Research Agency (FAPES) grant (R\$ 132.100,00) for the Ph.D. project "Skin cancer detection based on images collected from smartphones and patient demographics".
- **2016:** Full scholarship from Brazil's research agency CAPES (R\$ 26,400/year) for a four-years PhD program at the Federal University of Espírito Santo.
- **2014:** Full scholarship from Brazil's research agency CAPES (R\$ 18,000/year) for a two-years master's degree program at the Federal University of Espírito Santo.
- **2013:** The best undergraduate research work in engineering and exact sciences at the Federal University of Espírito Santo (out of 151 projects).
- **2013:** 2nd place (out of 19 teams) in the Latin America Robotics Competition (LARC), category IEEE-OPEN, Arequipa, Peru.
- **2012:** The State of Espírito Santo Research Agency (FAPES) scholarship for undergraduate research (R\$ 4,800/year).
- **2011:** 1st place (out of 22 teams) in the Latin America Robotics Competition (LARC), category IEEE-SEK, Bogotá, Colombia.
- **2010:** 1st place (out of 31 teams) in the Latin America Robotics Competition (LARC), category IEEE-SEK, São Paulo, Brazil.

Main publications

- Krohling, R.A., **Pacheco, A.G.C.** and Siviero, A.L., 2013. IF-TODIM: An intuitionistic fuzzy TODIM to multi-criteria decision making. Knowledge-Based Systems.
- **Pacheco, A.G.C.**, Krohling, R.A. and da Silva, C.A., 2018. Restricted Boltzmann machine to determine the input weights for extreme learning machines. Expert Systems with Applications.
- **Pacheco, A.G.C.**, Ali, A.R., Trappenberg, T., 2019. Krohling, R.A., 2019. Skin cancer detection based on deep learning and entropy to detect outlier samples. International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI) @ ISIC challenging workshop.
- **Pacheco, A.G.C.** and Krohling, R.A., 2019. The impact of patient clinical information on automated skin cancer detection. Computers in biology and medicine.
- **Pacheco, A.G.C.**, Sastry C.S., Trappenberg, T., Oore, S., and Krohling, R.A., 2020. On Out-of-Distribution Detection Algorithms With Deep Neural Skin Cancer Classifiers. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) @ ISIC 2020.
- **Pacheco, A.G.C.** and Krohling, R.A., 2021. An attention-based mechanism to combine images and metadata in deep learning models applied to skin cancer classification. IEEE Journal of Biomedical and Health Informatics.

- **Pacheco, A.G.C.** et al., 2023. Learning to estimate heart rate from accelerometer and user's demographics during physical exercises. IEEE Journal of Biomedical and Health Informatics.

Complete list available on [Google Scholar](#)

Academic activity and service

- **Teaching:**

INF-16170 - Artificial Intelligence in Health INF-15927 - Software Development I
 INF-15977 - Mobile Development
 INF-16153 - Software Development II
 INF-16189 - Intro to Computer Engineering

- **Conference and Journal Reviewing:**

2025: Nature Scientific Report, Computers in Biology and Medicine
 2024: IEEE Journal of Biomedical and Health Informatics, Computers in Biology and Medicine
 2023: Artificial Intelligence in Medicine and Biomedical Signal Processing and Control, IEEE Journal of Biomedical and Health Informatics
 2022: IEEE Journal of Biomedical and Health Informatics
 2021: IEEE Journal of Biomedical and Health Informatics, Medical Image Analysis, ISIC @ CVPR (program committee)
 2020: IEEE Journal of Biomedical and Health Informatics
 2019: Computers & Industrial Engineering, IEEE International Joint Conference on Neural Networks, and Neurocomputing
 2018: IEEE International Joint Conference on Neural Networks

- **University Activities:**

2024 - now: Amamenta UFES
 2022 - now: Padtech UFES
 2020: Orienta Covid ES HUCAM UFES
 2017 - 2020: Dermatological and Surgical Assistance Program (PAD-UFES)
 2018: Kangaroo Project (UFES)
 2012 - 2014: UFES' robotic team (ERUS)
 2012: Solidarity Teaching Project (PAS-UFES)

- **Advising:**

The complete list of students who have been advised by me is available at my [personal page](#).

Invited talks

- **Institutional talks:**

2025: Ethics in AI: Why should we talk about it?, AI Specialization course
 2024: Artificial Intelligence in Health
 2023: PAD-UFES-20: The challenges and opportunities in creating a skin lesion dataset, Datasets through the Looking-Glass Webinar.
 2023-2024: How AI impacts your daily life (and you may not know about it), CT de portas abertas, UFES, Vitória, Brazil.

2019: What is machine learning? Faculdade Multivix, Vitória, Brazil.

2018: Introduction to Python for scientific computing. Production Engineer, UFES, Vitória, Brazil.

2016: Introduction to data classification. Jornada de Atualização em Computação, Elétrica e Eletrônica - JAACE, UFES Vitória, Brazil.

- **Conference Orals:**

2020: Learning dynamic weights for an ensemble of deep models applied to medical imaging classification. IJCNN 2020 - Online.

2020: An App to Detect Melanoma Using Deep Learning: An Approach to Handle Imbalanced Data Based on Evolutionary Algorithms. IJCNN 2020 - Online.

2019: Recent advances in deep learning applied to skin cancer detection. NeurIPS 2019 @ Retrospectives workshop - Vancouver, Canada.

2018: An approach to improve online sequential extreme learning machines using restricted Boltzmann machines. IJCNN 2018 - Rio de Janeiro, Brazil.

2016: Discriminative Restricted Boltzmann Machine applied to data classification. SBPO 2016 - Vitória, Brazil.

Technical and Personal skills

- **Natural Languages:** native Portuguese and high level of proficiency in English.

- **Programming Languages, Libraries, and Frameworks I've worked with:**

- Python, PyTorch, TensorFlow/Keras, Scikit-learn, OpenCV, NumPy, Pandas, and Matplotlib
- C, MATLAB, and Java
- Jekyll, Spring Boot, Angular, React-native, SQL, HTML, and CSS
- Git, Docker, and Latex

- **Hardware:** Arduino, ESP-32, and Raspberry-Pi

Check some projects on my [Github](#)

Additional activities

- I have a blog named [Computação inteligente](#) in which I teach Artificial Intelligence/Machine Learning to Portuguese speakers. In Brazil, most people do not or have low proficiency in English, which limits them to learn concepts in this field. My goal is to fill this gap and help them to have access to this knowledge.

- As you can see in my activities, I am very engaged in social projects. I always focus on using my knowledge for social good. Currently, my main goal is to help clinicians to improve skin cancer assessment for low-income people in Brazil.

References

- Available upon request.