

# Jeovane Honório Alves

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 <https://jeohalves.github.io/>

## Summary

I have a Ph.D. in Computer Science from the Federal University of Parana (UFPR). Research and professional interests are artificial intelligence (AI), computer vision (CV), machine learning (ML), deep learning (DL), neural architecture search (NAS), evolutionary computation, image processing, natural language processing (NLP), and time series analysis.

My thesis was focused on ML, CV and NAS applied to natural and medical images (e.g., CIFAR, ImageNet, and CHAOS challenge datasets). I also work with several frameworks, like PyTorch, Keras, SciKit-Learn, ITK and VTK, Keras, Pandas, Matplotlib, Seaborn, Statsmodel, Detectron, NumPy, SciPy, and OpenCV, for different tasks, like image classification, object detection, segmentation, regression, time series forecasting, and clustering.

## Experience

### **Doctoral Fellow**

Universidade Federal do Paraná

Oct 2016 - Dec 2021 (5 years 3 months)

- Generation of custom Deep Learning (DL) models, i.e., neural architecture search (NAS), for Computer Vision (CV) problems
- Application of evolutionary computation techniques for an optimized NAS
- Image classification and segmentation of natural and volumetric (3D) medical images (e.g., CIFAR, ImageNet, CHAOS challenge)
- Strong use of PyTorch and its eager execution for dynamic NAS and model optimization
- Employment of different convolutional (e.g., dilated, separable depthwise, grouped) and auxiliary operations (e.g., batch norm, poolings)
- Strong data augmentation for image classification and segmentation
- Optimization methods like SGD, Adam, cosine annealing, one-cycle scheduler, automatic mixed-precision

### **Graduate Research Fellow**

Universidade Federal do Paraná

Feb 2014 - Aug 2016 (2 years 7 months)

- Conventional feature engineering (features as tabular data) for image classification
- Image processing (i.e., superpixels) for ROI segmentation
- Usage of the Insight Toolkit (ITK) for medical image processing (C++)
- Usage of OpenCV for image processing
- Scikit-Learn and Shark-ML for machine learning
- Usage of classification methods like Random Forest and SVM
- MongoDB for data storage

### **Support Analyst** MTM Sistemas

Jan 2013 - Jan 2014 (1 year 1 month)



### **Scientific Initiation Fellow**

Universidade Federal do Paraná

Nov 2011 - Dec 2012 (1 year 2 months)



### **Technical Support**

Universidade Federal do Paraná

May 2011 - Oct 2011 (6 months)

## **Education**



### **Universidade Federal do Paraná**

Doctor of Philosophy (Ph.D.), Computer Science

Oct 2016 - Sep 2021

Thesis titled "Efficient Evolutionary-based Neural Architecture Search in few GPU hours for Image Classification and Medical Image Segmentation"



### **Universidade Federal do Paraná**

Master's degree, Electrical and Electronics Engineering

Feb 2014 - Aug 2016

Dissertation titled "A Lung Cancer Detection Approach Based on Shape Index and Curvedness Superpixel Candidate Selection"



### **Universidade Federal do Paraná**

Technologist, Systems Analysis and Development

2011 - 2013

Undergraduate thesis titled "Smart Home Automation" (in Portuguese)

## **Skills**

Machine Learning • Computer Vision • Image Processing • Python • C++ Language • PyTorch • Deep Learning • Neural Architecture Search (NAS) • Convolutional Neural Networks (CNN) • Natural Language Processing (NLP)