

# Jeovane Honório Alves

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## Summary

I hold a Ph.D. in Computer Science from the Federal University of Parana (UFPR). I am passionate about leveraging my research and professional interests in artificial intelligence (AI), computer vision (CV), machine learning (ML), deep learning (DL), neural architecture search (NAS), natural language processing (NLP), evolutionary computation, and image processing to drive innovation and improve business outcomes.

My doctoral research was focused on ML, CV, and NAS applied to natural and medical images, including CIFAR, ImageNet, and CHAOS challenge datasets. I have extensive experience working with several frameworks, including PyTorch, Numpy, Scikit-learn, Pandas, Keras, SciKit-Learn, ITK and VTK, Detectron, MMDetection, and OpenCV, to solve various tasks such as image classification, object detection, semantic and instance segmentation.

I am excited to bring my expertise and problem-solving skills to collaborate with talented teams and create innovative solutions that can transform industries and improve people's lives.

## Experience



### Computer Vision Research Engineer

Adroit Robotics

Feb 2022 - Present (1 year 1 month)

- Anomaly Detection (i.e., diseases and plagues) in agricultural applications;
- Development and Deployment of Deep Learning Models for computer vision tasks;
- Object Detection and Instance Segmentation using state-of-the-art models such as YOLOX, Cascade Mask-RCNN and Swin Transformer;
- Proficient in MMDetection framework for computer vision tasks;
- Utilization of Deep Active Learning methods for reducing annotation costs in computer vision tasks.



### Doctoral Fellow

Universidade Federal do Paraná

Oct 2016 - Sep 2021 (5 years)

- Generation of custom Deep Learning (DL) models, including neural architecture search (NAS), for Computer Vision (CV) problems;
- Application of evolutionary computation techniques to optimize NAS;
- Image classification and segmentation of natural and volumetric (3D) medical images, such as CIFAR, ImageNet, and CHAOS challenge datasets;
- Expertise in PyTorch and its eager execution for dynamic NAS and model optimization;
- Extensive use of various convolutional operations, such as dilated, separable depthwise, and grouped convolutions, as well as auxiliary operations like batch normalization and pooling;
- Strong focus on data augmentation for image classification and segmentation;

- Utilization of optimization methods, such as SGD, Adam, cosine annealing, one-cycle scheduler, and automatic mixed-precision.



### **Assistant Professor**

Uniovet

Aug 2019 - Dec 2020 (1 year 5 months)

Instructed courses in Java web development, data science, and software engineering.



### **Assistant Professor**

Unibrasil Centro Universitário

Mar 2019 - Jul 2019 (5 months)

Instructed a course on the fundamentals of web development.



### **Graduate Research Fellow**

Universidade Federal do Paraná

Feb 2014 - Aug 2016 (2 years 7 months)

- Conventional feature engineering for image classification;
- Image processing techniques such as superpixels for region-of-interest segmentation;
- Medical image processing using the Insight Toolkit (ITK) in C++;
- Image processing using OpenCV;
- Machine learning using Scikit-Learn and Shark-ML;
- Classification methods such as Random Forest and SVM;
- Data storage using MongoDB.



### **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**

Docker Products • Windows Azure • Amazon Web Services • Anomaly Detection • Python (Programming Language) • Machine Learning • Computer Vision • PyTorch • NumPy • Scikit-Learn