

Ricardo Rossiter Barioni

PERSONAL DETAILS

<i>Birth</i>	April 22, 1996
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PROFESSIONAL EXPERIENCE

Machine Learning Engineer @ SiDi
Recife, Brazil

Jan 2021 - Current

Academic Researcher @ Voxar Labs
Recife, Brazil

Aug 2016 - Aug 2020

EDUCATION

M.Sc. in Computer Science
Federal University of Pernambuco (UFPE), Recife, Brazil

Aug 2018 - Jul 2020

B.Sc. in Computer Science
Federal University of Pernambuco (UFPE), Recife, Brazil

Apr 2014 - Jul 2018

PUBLICATIONS

A Metric Learning Based Solution for Non-Stationary
Acoustic Source Classification
*Paper em 2022 XL Simpósio Brasileiro de Telecomunicações e
Processamento de Sinais (SBrT)*

Sep 2022

HuTrain: a Framework for Fast Creation of Real
Human Pose Datasets
*Poster at 2020 21st International Symposium on Mixed and
Augmented Reality (ISMAR)*

Jul 2020

Songverse: a music-loop authoring tool based on
Virtual Reality
*Extended Paper at 2020 11st Journal on Interactive Systems
(JIS)*

Jul 2020

Usability and effects of text, image and audio feedback on exercise correction during augmented reality based motor rehabilitation

Sep 2019

Elsevier Computer & Graphics (C&G) Special Issue at 2019 21th Symposium on Virtual and Augmented Reality (SVR)

BalletVR: a Virtual Reality System for Ballet Arm Positions Training

Aug 2019

Full paper at 2019 21th Symposium on Virtual and Augmented Reality (SVR)

Songverse: a music-loop authoring tool based on Virtual Reality

Aug 2019

Full paper at 2019 21th Symposium on Virtual and Augmented Reality (SVR)

Human Pose Tracking from RGB Inputs

Aug 2018

Full paper at 2018 20th Symposium on Virtual and Augmented Reality (SVR)

ARkanoidAR 2.0: Otimizações em uma solução de realidade aumentada com base em testes de usabilidade

Aug 2018

Poster at 2018 26th Congresso Brasileiro de Engenharia Biomédica (CBEB)

ARkanoidAR: an Augmented Reality System to Guide Biomechanical Movements at Sagittal Plane

Jun 2017

Full paper at 2017 19th Symposium on Virtual and Augmented Reality (SVR)

RESEARCH AND DEVELOPMENT

Academic Research

Jan 2018 - Aug 2020

Voxar Labs, Recife, Brazil

Academic researches focused in natural interaction and machine learning.

Technique enhancement of human pose estimation methods from RGB inputs.

Academic Research

Mar 2019 - Aug 2020

CIn Projeto Samsung, Recife, Brazil

Enhancement of user experience on extended realities, in collaboration with Voxar Labs.

Academic Research

Jul 2017 - Mar 2019

CIn Projeto Samsung, Recife, Brazil

Enhancement of computer vision's state of art methods, in collaboration with Voxar Labs.

Undergraduate Research

Aug 2016 - Nov 2017

Voxar Labs, Recife, Brazil

Academic researches focused in natural interaction and augmented reality.

Technique enhancement of therapeutic exercise orientations on augmented reality applica-

tions using biomechanical gestures recognition and functional gestures recognition methods exploration.

Undergraduate Research

May 2017 - Jun 2017

Voxar Labs, Recife, Brazil

Academic researches focused in data visualization.

Development of a web tool for analyzing bat populations from thermal images obtained on caves.

CERTIFICATES

Communication in the 21st Century Workplace

2022

UCI, Coursera

Effective Problem-Solving and Decision-Making

2022

UCI, Coursera

Work Smarter, Not Harder: Time Management for Personal & Professional Productivity

2022

UCI, Coursera

Digital Signal Processing 1: Basic Concepts and Algorithms

2022

EPFL, Coursera

Device-based Models with TensorFlow Lite

2022

deeplearning.ai, Coursera

Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization

2021

deeplearning.ai, Coursera

Introduction to Machine Learning in Production

2021

deeplearning.ai, Coursera

NLP / Sequence Models

2020

deeplearning.ai, Coursera

PROJECTS

HuTrain

2020

This project is a framework for creating human pose estimation datasets quickly and easily. By using Python and libraries such as PyTorch and OpenCV, HuTrain comprises steps such as automatic camera calibration, refined human pose estimation and known dataset formats conversion.

Dog Breed Recognition

2020

This project is an algorithm for recognizing dog breeds from RGB images. By using Python and the PyTorch open-source machine learning framework, it applies convolutional neural network techniques for the classification of dog breeds and supports the enrolling of new dog breeds dynamically.

Credit Risk Analysis

2020

A project for the evaluation of the non-payment risk of bank clients. This credit risk analysis was implemented using Python and libraries such as Pandas, scikit-learn and Seaborn.

BalletVR

2019

This system is a virtual reality application for guiding ballet dancers through learning and practicing basic ballet arm positions. By using a Microsoft Kinect for tracking the dancer's performed poses, the system compares them with basic arm positions, proposed by École Française, and allows the dancer to practice autonomously.

WRITEME

2019

This system consists of a web interface where developers can obtain recommendations of sections, based on research and the most popular open-source repositories, for the READMEs they are writing.

SongVerse

2019

This project is a Digital Music Instrument (DMI) that allows the user to create music in a virtual reality scenario where, by using wand controllers, the user interacts with an environment that resembles the outer space.

Onboarding Visualization

2018

This tool was built with the purpose of helping open-source maintainers to measure the effectiveness of their onboarding process, and give helpful tips on how to improve it.

Musical Invaders

2018

Based on the original 1978 arcade shooting game called Space Invaders, it is a web game where the player controls a spaceship, whose objective is to prevent aliens to reach earth by shooting musical notes. Not only fun, but Musical Invaders also encourages players to be creative by improvising new melodies while playing.

BatVis

2017

This project is a web application for visualizing bats tracking data obtained from thermal images in caves. This application is able to provide insights, such as changes in bats populations and flight behavior, in a more intuitive fashion, which can be used to the biomonitoring of population tendencies, habitat use and the effects of climate change.

ARkanoidAR

2017

This project is an augmented reality system that guides physiotherapy patients through the rehabilitation process of biomechanical movements at the sagittal plane. The system uses Microsoft Kinect for tracking the user's poses and instructs the user which movements must be performed by providing a series of visual and auditory feedback.

LEADERSHIP AND AWARDS

Reviewer at Symposium on Virtual and Augmented Reality 2020 (SVR)

Brazil

Aug 2020

Publication at Congresso Brasileiro de Engenharia Biomédica 2018 (CBEB)

Hotel Atlântico Búzios, Búzios, Brazil

Oct 2018

Participation and Presentation at Symposium on Virtual and Augmented Reality 2017 (SVR)

PUCPR, Curitiba, Brazil

Nov 2017

Volunteer at Olimpíada Brasileira de Robótica 2017 (OBR)

Arena Pernambuco, São Lourenço da Mata, Brazil

Aug 2017

Teacher Assistant of Programming Language Paradigms

Federal University of Pernambuco (UFPE), Recife, Brazil

Aug 2016 - Mar 2017

Participation at International Free Software Forum 2017 (FISL)

PUCRS Center of Events, Porto Alegre, Brazil

Jul 2016

Teacher Assistant of Algorithms and Data Structures

Federal University of Pernambuco (UFPE), Recife, Brazil

Mar 2015 - Mar 2016

Awarded B in First Certificate in English (FCE)

University of Cambridge, United Kingdom

Jan 2013

SKILLS

Languages

Portuguese (native), English (advanced)

Software

Python, TensorFlow, OpenCV, PyTorch, Keras, C++
SQLite, Git, Docker

Interests

Machine Learning, Computer Vision, Augmented Reality,
Natural Interaction, Data Visualization