Ricardo Rossiter Barioni

PERSONAL DETAILS

Birth	April 22, 1996
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PROFESSIONAL EXPERIENCE

Machine Learning Engineer @ SiDi — Jan 2021 - Current
Recife, Brazil

Academic Researcher @ Voxar Labs — Aug 2016 - Aug 2020
Recife, Brazil

EDUCATION

M.Sc. in Computer Science — Aug 2018 - Jul 2020
Federal University of Pernambuco (UFPE), Recife, Brazil

B.Sc. in Computer Science — Apr 2014 - Jul 2018
Federal University of Pernambuco (UFPE), Recife, Brazil

PUBLICATIONS

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

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

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 applications 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

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) Aug 2020
Brazil

Publication at Congresso Brasileiro de Engenharia Biomédica 2018 (CBEB) Oct 2018
Hotel Atlântico Búzios, Búzios, Brazil

Participation and Presentation at Symposium on Virtual and Augmented Reality 2017 (SVR) — Nov 2017
PUCPR, Curitiba, Brazil

Volunteer at Olimpíada Brasileira de Robótica 2017 (OBR) — Aug 2017
Arena Pernambuco, São Lourenço da Mata, Brazil

Teacher Assistant of Programming Language Paradigms — Aug 2016 - Mar 2017
Federal University of Pernambuco (UFPE), Recife, Brazil

Participation at International Free Software Forum 2017 (FISL) — Jul 2016
PUCRS Center of Events, Porto Alegre, Brazil

Teacher Assistant of Algorithms and Data Structures — Mar 2015 - Mar 2016
Federal University of Pernambuco (UFPE), Recife, Brazil

Awarded B in First Certificate in English (FCE) — Jan 2013
University of Cambridge, United Kingdom

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