

Ricardo Rossiter Barioni

PERSONAL DETAILS

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| <i>Birth</i> | April 22, 1996 |
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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

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

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

Sep 2019

BalletVR: a Virtual Reality System for Ballet Arm Positions Training

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

Aug 2019

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

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

Aug 2019

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

Aug 2018

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)

EXPERIENCE

Academic Research

Jan 2018 - Aug 2020

Voxar Labs, Recife, BR

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, BR

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

Academic Research

Jul 2017 - Mar 2019

CIn Projeto Samsung, Recife, BR

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

Undergraduate Research

Aug 2016 - Nov 2017

Voxar Labs, Recife, BR

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, BR

Academic researches focused in data visualization.

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

CERTIFICATES

NLP / Sequence Models

2020

deeplearning.ai, Coursera

PROJECTS

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.

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

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| Reviewer at Symposium on Virtual and Augmented Reality 2020 (SVR) <i>Brazil</i> | Aug 2020 |
| Publication at Congresso Brasileiro de Engenharia Biomédica 2018 (CBEB) <i>Hotel Atlântico Búzios, Búzios, Brazil</i> | Oct 2018 |
| Participation and Presentation at Symposium on Virtual and Augmented Reality 2017 (SVR) <i>PUCPR, Curitiba, Brazil</i> | Nov 2017 |
| Volunteer at Olimpíada Brasileira de Robótica 2017 (OBR) <i>Arena Pernambuco, São Lourenço da Mata, Brazil</i> | Aug 2017 |
| Teacher Assistant of Programming Language Paradigms <i>Federal University of Pernambuco (UFPE), Recife, Brazil</i> | Aug 2016 - Mar 2017 |
| Participation at International Free Software Forum 2017 (FISL) <i>PUCRS Center of Events, Porto Alegre, Brazil</i> | Jul 2016 |
| Teacher Assistant of Algorithms and Data Structures <i>Federal University of Pernambuco (UFPE), Recife, Brazil</i> | Mar 2015 - Mar 2016 |
| Awarded B in First Certificate in English (FCE) <i>University of Cambridge, United Kingdom</i> | Jan 2013 |

SKILLS

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| <i>Languages</i> | Portuguese (native), English (advanced) |
| <i>Software</i> | Python, OpenCV, PyTorch, Keras, C++, SQLite, Git, Docker |
| <i>Interests</i> | Machine Learning, Computer Vision, Augmented Reality, Natural Interaction, Data Visualization |