# Ricardo Rossiter Barioni

## PERSONAL DETAILS

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|---|---|
| *Birth* | April 22, 1996 |
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| *Github* | github.com/rrbarioni |

## 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 (accepted for publication)*** *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 (accepted for publication)*** *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)*


## 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

### 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

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