Eduardo Rodrigues

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Education

Center of Informatics of the Federal University of Pernambuco - CIn/UFPE   *Recife, Pernambuco, Brazil*
B.Sc. in Computer Science   *2013 - 2018*

Professional Experience

Inloco   *Recife, Pernambuco*
Backend Engineer   *Jan. 2020 - current job*
- Software development and maintenance of the backend systems and services of the company

Wildlife Studios   *São Paulo, São Paulo*
Game Engineer   *Aug. 2018 - Oct. 2019*
- Game development of 3D multiplayer mobile games using Unity Engine (C#), Javascript and Node.js
- I was part of the core development team of a real-time multiplayer game called War Machines, one of the company's biggest and most successful games

Voxar Labs - CIn/UFPE   *Recife, Pernambuco*
Researcher   *Aug. 2015 - Jul. 2018*
- Academic research and software development focused on computer vision, mixed reality, human-computer interaction, and multi-target tracking (C#, C/C++, Objective-C, Swift)
- Advisor: Veronica Teichrieb

SUATI   *Recife, Pernambuco*
Software Engineer (Internship)   *Aug. 2015 - Feb. 2016*
- Software development on the core team of the company major product (C)

Young Talents for Science - CAPES   *Recife, Pernambuco*
Junior Researcher   *Mar. 2015 - Mar. 2016*
- Academic research program focused on multitarget tracking with computer vision algorithms to control bat populations (C/C++, OpenCV, and OpenGL)

Programming skills

Languages
C#(3 years), Node.js (2 years), Javascript (2 years), C/C++ (2 years), Python (6 months), Objective-C (6 months), Java (6 months)

Libraries and tools
Unity3D, OpenCV, OpenGL, Git, Visual Studio, Terminal

Research and Development

Voxar Shift   *Voxar Labs*
Researcher/Developer   *Mar. 2018 - Jul. 2018*
- Project focused on create products on top of research technologies
- Objective-C/C/C++/Kinect SDK

Samsung

RESEARCHER/DEVELOPER
Set. 2017 - Feb. 2018
- Object tracking and movement tracking research using computer vision algorithms
- C/C++/OpenCV

Voxar Labs
Voxar Labs

RESEARCHER/DEVELOPER
Jan. 2017 - Jul. 2017
- Mixed Reality interaction interface for consumer TVs
- C#/Unity3D/Kinect SDK

SimplifiqueGP
Voxar Labs

DEVELOPER
Jul. 2016 - Dec. 2016
- Multiplatform 3D rendering for engineering
- C/C++/C#/Objective-C/OpenGL/OpenSceneGraph

Voxar Labs
Voxar Labs

RESEARCHER / DEVELOPER
Mar. 2015 - Jun. 2016
- Multitarget tracking research focused on tracking and counting bat populations
- C/C++/C#/OpenCV/OpenGL/ThreeJS/D3/Python

Publications

[1] **A comparative evaluation of direct hand and wand interactions on consumer devices**. Figueiredo, Lucas, Eduardo Rodrigues, João Marcelo Teixeira, and Veronica Teichrieb. *Computers & Graphics*. 2018.

[2] **Mixed Reality TVs: Applying Motion Parallax for Enhanced Viewing and Control Experiences on Consumer TVs**. Rodrigues, Eduardo, Lucas Silva Figueiredo, Lucas Maggi, Edvar Neto, Layon Tavares Bezerra, João Marcelo Teixeira, and Veronica Teichrieb. *Symposium on Virtual and Augmented Reality (SVR)* . 2017.

[3] **Multi-objective tracking applied to bat populations**. Rodrigues, Eduardo, João Marcelo Teixeira, Veronica Teichrieb, and Enrico Bernard. *Symposium on Virtual and Augmented Reality (SVR)* . 2016.

Languages

Portugues

NATIVE

English

FLUENT

Projects

A Comparative Evaluation of Direct Hand and Wand Interactions on Consumer Devices

This work evaluates the use of two input techniques for VR applications: wands and hands. Experiments were performed using consumer devices (Leap Motion Controller and HTC Vive), aiming at understanding how popular hardware respond to users' needs. Five distinct scenarios were tested, exploring both near and far object interaction. The evaluation was divided into three steps: user profile evaluation, system performance evaluation, and System Usability Scale questionnaire. The results showed that even with a lower task accuracy, natural interaction provided by using a hand representation on the virtual world gained user's preference when interacting with virtual elements that were close to user. For distant object interaction, it still needs some improvements.

(C#/Unity3D/HTC Vive/Leap Motion)

ARGo

An augmented reality framework that makes the creation process of an AR application easier then never, avoiding the need of deep knowledge in computer graphics, focusing only on content creation with just a few lines of code.

(Objective-C/C/C++/Swift)

Mixed Reality TVs

A Unity Engine project developed using the Kinect SDK. This project address the interactivity with Smart TVs by using body gestures combined with the visualization modification through the Motion Parallax effect. This application is capable to fully calibrate the TV virtual environment with the real world, so the TV becomes a Mixed Reality display, showing its content coupled with the real world providing the user a new set of interaction techniques such as visually pinpoint and touch the virtual items of a TV menu by using metaphors based on natural physical interactions such as collisions, lights, shadows and magnetic attractions.

(C#/Unity3D/Kinect)

S.i.R.A.C

This project is a computer vision algorithm that track bats in a clutter environment from a thermal image to account the population of their colony. After track the bats the algorithm generates a text file that is loaded by a 3D viewer that reconstructs all the scene in a 3D environment in order to help the analysis of the tracked flights by researchers in areas like biodiversity and biology.

(C/C++/C#/Python/OpenCV/OpenGL/ThreeJS/D3)

UnityRTGI

A Unity Engine project where the user can import .obj extension files (local or online) during execution time without the need of compiling the asset with the project.

(C#/Unity3D)

MONO

A game jam project that is a puzzle/platform game where the player changes the world colors between black and white to overcome the proposed challenges.

(C#/Unity)

x:pression

A computer vision algorithm that make a real time tracking of the user's face and detect the user's actual emotion based on the extracted features.

(C/C++/CLM-Framework)

Features Extractor

A computer vision algorithm using OpenCV library that tracks a given texture on a web cam image and render a 3D object on the texture surface.

(C/C++/OpenCV/OpenGL)

3D Render

3D RENDER: BASIC RENDERING PROGRAM OF A 3D WORLD WITH AN OBJECT LOADER FOR .OBJ EXTENSION FILES USING OPENGL.

(C/C++/OpenGL)

Teaching experience

Teaching Assistent   *Informatics Center - UFPE*

ALGEBRA FOR COMPUTER SCIENCE   *Aug. 2014 - Dec. 2014*

Teaching Assistent   *Informatics Center - UFPE*

PROGRAMMING INTRODUCTION   *Jan. 2014 - Jul. 2014*