

Paulo Bala

Summary: I'm currently a Ph.D. student in Digital Media at FCT-UNL, focusing on Extended Reality (XR), and have published in top peer-reviewed conferences in Human-Computer Interaction. My academic and work experience has allowed me to experience different roles in Digital Media production, which gave me a flexible toolset of skills to apply when designing new user experiences.



Education

Ph.D in Digital Media, September 2016 - ongoing.

Faculdade De Ciências e Tecnologia (FCT), Universidade Nova de Lisboa, Lisboa

Research-focused multidisciplinary degree targeting creation, production and distribution of Digital Media.

Curricular component: History and Trends in Digital Media; Media Lab; Media Technology; Communication Theory; Research Methods; Thesis Plan; Thesis.

Dual Masters of Entertainment Technology, August 2013 - May 2015.

Carnegie Mellon University, Entertainment Technology Center, Pittsburgh, PA and **University of Madeira**, Funchal, Portugal

Project-based, multidisciplinary degree focusing on designing interactive entertainment experiences through teamwork.

Curricular component: Building Virtual Worlds; Visual Story; Improvisational Acting; ETC Fundamentals; Game Design; Advanced Topics in Informatics; Creative Writing; Interdisciplinary Project ETC I/II/III.

Masters in Computer Science, September 2010 - May 2013.

Bachelor in Computer Science, September 2007 - June 2010.

University of Madeira, Funchal, Portugal

Multidisciplinary degree focusing on software development and human computer interaction.

Bachelor Curricular component: Calculus I; Programming Paradigms; History of Science and Technology; Experimental Science; Mechanics and Waves; Discrete Mathematics; Digital Systems; Rhetoric and Communication; Computational Logic; Probability and Statistics; Introduction to Business Science; Data Structure and Algorithms; Theory and Foundations of Computation; Object-oriented Programming; Computer Architecture; Anglo-American Civilizations and Culture; Human-Computer Interaction; Software Processes and Metrics; Database Management Systems; Operative Systems; Requirement Engineering; Artificial Intelligence; Data Networks and Communication; Multimedia Systems.

Masters Curricular component: Software Design and Implementation; Network Centered Applications; Organizational Engineering; Systems and Network Management; Software Architecture; Decision Support Systems; Language and Compiler Theory; Software Architecture for User Interfaces; Investment Project Analysis; Embodied Interaction.

Dissertation "tCAD: a 3D Modeling Application on a Depth Enhanced Tabletop Computer" - Designed and implemented a system mixing a tabletop computer, depth tracking (Microsoft Kinect) and tangible interaction (reactIVision); designed and implemented a 3D modeling application using constructive solid geometry.



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Skills



Coding

C#

C++

R

Python

PHP

HTML

CSS

JavaScript

Java



Design & Film

Adobe Photoshop

Adobe Illustrator

Adobe Premiere

Adobe After Effects



Software

Unity 3D

Autodesk Maya

openFrameworks

XCode

Processing

Microsoft Office

SPSS

R Studio



Work Experience

Beanstalk, M-ITI, Funchal, November 2015 – December 2016.
Research Assistant

- Working on location based experiences exploring VR in mobile devices, aimed at showcasing Madeira's heritage to tourists

Future Fabulators, M-ITI, Funchal, July 2014 – September 2014.
Developer and Experience Designer.

- Summer internship where we created two interactive mobile VR experiences using Google Cardboard and Durovis Dive for exhibitions in Austria, Romania and Scotland.

AppSalad Lda. Castelo Branco, November 2012 – June 2013.
Junior Developer for Backend and Mobile.

- Small teams (2 to 3 people) working on projects for private clients.
- Experience with database management, web services (Yii), interface design and implementation for mobile and web, 2D illustration for games, game design and implementation for mobile.



Selected Publications

Paulo Bala, Ian Oakley, Valentina Nisi, and Nuno Nunes. **Dynamic Field of View Restriction in 360° Video: Aligning Optical Flow and Visual SLAM to Mitigate VIMS**. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI 2021).

Paulo Bala, Ian Oakley, Valentina Nisi, and Nuno Nunes. **Staying on Track: a Comparative Study on the Use of Optical Flow in 360° Video to Mitigate VIMS**. In Proceedings of the ACM International Conference on Interactive Media Experiences (IMX 2020).

Paulo Bala, Raul Masu, Valentina Nisi, and Nuno Nunes. **"When the Elephant Trumps": A Comparative Study on Spatial Audio for Orientation in 360° Videos**. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI 2019).

Paulo Bala, Mara Dionisio, Valentina Nisi, Nuno Nunes. 2016. **IVRUX: A Tool for analyzing Immersive Narratives in Virtual Reality**. Manuscript submitted for publication in Proceedings of the 9th International Conference on Interactive Digital Storytelling (ICIDS 2016).

Paulo Bala, Lucilia Nóbrega, Guilherme Neves, Laís Lopes, Joana Morna, João Camacho, and Cristina Freitas. 2015. **Keyewai: Looking at Cooperation in a Holographic Projection Screen**. In Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '15). ACM, New York, NY, USA, 61-64.



For a complete list of publications and projects, please check www.paulobala.com