

# TiagoMadeira



## Personal Information

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## Author Identifiers

**Google Scholar ID**  
xCqUkX4AAAAJ  
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0000-0003-1335-0803

## Languages

Portuguese (native)  
English (fluent)

## ABOUT ME

Received the MSc in Computer and Telematics Engineering from the University of Aveiro in 2019. Since then, I have worked as a researcher with the Institute of Electronics and Informatics Engineering of Aveiro (IEETA). I am currently a Computer Engineering PhD student (thesis submitted) and Research Fellow, working in Computer Vision. My research interests include 3D Reconstruction, Machine Learning, Virtual and Augmented reality, Visual Quality Assessment, Human-Computer Interaction, and Parallel Computing. I pride myself on being a strong communicator and a collaborative team player, often taking on the role of spokesman in projects.

## EDUCATION

**University of Aveiro**, Portugal

Doctoral Programme in Computer Engineering (focussing on Computer Vision)  
October 2020 - Present (thesis submitted)

"Optimization of Geometry and Texture for 3D Reconstruction Using RGB-D Data"

**University of Aveiro**, Portugal

Integrated Master's Degree in Computer and Telematics Engineering  
September 2014 - July 2019

"Enhancement of RGB-D Image Alignment Using Fiducial Markers"

## EXPERIENCE

**Institute of Electronics and Informatics Engineering of Aveiro**, Portugal

Research Fellow

ILLIANCE project in collaboration with Bosch  
October 2024 - Present

**Institute of Electronics and Informatics Engineering of Aveiro**, Portugal

Pre Doctoral Fellow

PhD grant by FCT - Foundation for Science and Technology  
October 2020 - September 2024

**Institute of Electronics and Informatics Engineering of Aveiro**, Portugal

Research Fellow

Smart Green Homes project in collaboration with Bosch  
November 2019 - September 2020

## TECHNICAL SKILLS

**Languages** : Python, C++, Java, Matlab

**Tools/Frameworks** : OpenCV, PyTorch, Numba, Git, Django, Docker, ROS

**Databases** : SQL Server, MySQL, GraphDB, MongoDB

## CERTIFICATIONS

**Machine Learning Specialization**

Stanford Online - UNVERARCTLHZ

**Advanced Learning Algorithms**

Stanford Online - SN6SMXY5CNFF

**Supervised Machine Learning: Regression and Classification**

Stanford Online - HAJQQPDGG7JZ

**Unsupervised Learning, Recommenders, Reinforcement Learning**

Stanford Online - QFSMWZLT6HV3

## PUBLICATIONS

1. **Madeira, T.**; Oliveira, M.; Dias, P. (2024) "Reflection-aware 3D Mirror Segmentation and Pose Estimation". The Visual Computer.
2. **Madeira, T.**; Oliveira, M.; Dias, P. (2024) "Meshtrics: Objective Quality Assessment of Textured 3D Meshes for 3D Reconstruction". Smart Tools and Applications in Graphics (STAG 2024); Verona, Italy.
3. **Madeira, T.**; Dal'Col, L.; Oliveira, M.; Dias, P. (2024) "3D Reconstruction Tutorial: Data Processing, Surface Reconstruction, and Texture Mapping". International Conference on 3D Web Technology (Web3D 2024); Guimarães, Portugal.
4. **Madeira, T.**; Oliveira, M.; Dias, P. (2024) "Neural Colour Correction for Indoor 3D Reconstruction Using RGB-D Data". Sensors, 24, 4141.
5. Dal'Col, L.; Coelho, D.; **Madeira, T.**; Dias, P.; Oliveira, M. (2023) "A Sequential Color Correction Approach for Texture Mapping of 3D Meshes". Sensors, 23, 607.
6. **Madeira, T.**; Marques, B.; Neves, P.; Dias, P.; Santos, B. S. (2022) "Comparing Desktop vs. Mobile Interaction for the Creation of Pervasive Augmented Reality Experiences". J. Imaging, 8, 79.
7. Coelho, D.; Dal'Col, L.; **Madeira, T.**; Dias, P.; Oliveira, M. (2022) "Robust 3D-Based Color Correction Approach for Texture Mapping Applications". Sensors, 22, 1730.
8. Oliveira, M.; Lim, G.-H.; **Madeira, T.**; Dias, P.; Santos, V. (2021) "Robust Texture Mapping Using RGB-D Cameras". Sensors, 21(9), 3248.
9. **Madeira, T.**; Marques, B.; Alves, J.; Dias, P.; Santos, B. S. (2021) "Exploring Annotations and Hand Tracking in Augmented Reality for Remote Collaboration". Human Systems Engineering and Design III; Springer International Publishing: Cham, Switzerland; pp. 83-89.
10. Oliveira, M.; Castro, A.; **Madeira, T.**; Pedrosa, E.; Dias, P.; Santos, V. (2020) "A ROS Framework for the Extrinsic Calibration of Intelligent Vehicles: a Multi-Sensor, Multi-Modal Approach". Robotics and Autonomous Systems, 131, 103558.
11. **Madeira, T.**; Oliveira, M.; Dias, P. (2020) "Enhancement of RGB-D Image Alignment Using Fiducial Markers". Sensors, 20(5), 1497.

## OTHER ACTIVITIES

### Modern Computer Graphics:

#### AI Techniques for 3D Reconstruction, Rendering, and Analysis

Attended intensive training on advanced AI techniques in computer graphics, focusing on 3D reconstruction, rendering, and analysis methodologies.  
{11, 12, 13} November 2024

#### students@deti

Discussed key outcomes of ongoing thesis work and collaborative projects, demonstrating novel methodologies and applications in a public project fair setting.  
June {2022, 2023, 2024}

#### Optimization Tools Workshop

Instructor at two day workshop about Python Optimization Tools.  
{16, 23} November 2021

Winter PhD School  
Verona, Italy

Public speaking at DETI, UA

Workshop at DEM, UA