

# João Pedro **Moreira Ferreira**

SOFTWARE ENGINEER · COMPUTER VISION ENGINEER · MACHINE LEARNING ENGINEER · DATA SCIENTIST

✉ joaopmoferreira@gmail.com 🌐 <https://jpeumesmo.github.io/> 📱 jpeumesmo

## Work Experience

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### Eldorado Research Institute

*Campinas, Brazil*

SOFTWARE ANALYST

*Dez. 2020 - Present*

- Research and develop algorithms for image and video enhancement in smartphones. Some of them in real time.
- Explore Deep Learning and Classical Image Processing techniques.
- Creation and curation of dataset to be used to train deep learning models.
- Design and develop pipelines for CI (Continuous Integration).
- Define good practices in machine learning to be used throughout a company.
- Design and implement a library for forecasting time series.

### Unifeso

*Teresópolis, Brazil*

PROFESSOR

*Mar. 2022 - Present*

- Coordinate a research and extension laboratory.
- Tutorship of final undergrad final project.

### UFMG - VeRLab/Petrobras

*Belo Horizonte, Brazil*

RESEARCHER/DEVELOPER

*Dez. 2018 - Dez. 2020*

- Research and develop state-of-the-art techniques to solve problems related to the reconstruction of construction sites, the schedule of construction sites, and teleoperation on construction sites.
- Design and develop systems to automatize the pipeline of reconstruction of a construction site.
- Design and develop hardware to collect data using a UGV (Unmanned Ground Vehicles), that also can be used by a human user.

## Teaching Experience

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### UFMG - Computational Linear Algebra

*Belo Horizonte, Brazil*

ASSISTANT

*2019*

- Weekly meetings of 1-hour duration, to solve questions and help undergrad students with theoretical and practical exercises.
- Prepare and correct theoretical and practical exercises, help professors on the correction of exams.
- Teach a class about PageRank.
- Class with 180 students.

### UFMG - Introduction to Visual Computing/Computer Vision

*Belo Horizonte, Brazil*

ASSISTANT

*2019*

- Teach classes about Machine Learning on Visual Computing to undergrad students.
- Help on the preparation of classes.

### UFSJ - Analytical Geometry

*São João del-Rei, Brazil*

ASSISTANT

*2015*

- Weekly meetings of 2-hour duration, to solve questions and help undergrad students with theoretical and practical exercises.
- Class with 90 students.

## Education

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### UFMG (Universidade Federal de Minas Gerais)

*Belo Horizonte, MG - Brazil*

M.Sc IN COMPUTER SCIENCE

*Aug. 2018 - Oct. 2020*

- Synthesizing Realistic Human Dance Motions Conditioned by Musical Data using Graph Convolutional Networks.

- Reconhecimento automatico de pistas para veículos autonomos utilizando técnicas de visão computacional.

## Honors & Awards

2021	<b>Best M.Sc. Dissertation Award in the WTD in Graphics, Patterns and Images</b> , SIBGRAPI	Online
2021	<b>Finalist of the Best M.Sc. Dissertation Award</b> , Brazilian Computing Society's Congress	Online
2017	<b>Honroable Mention</b> , Symposium on Virtual and Augmented Reality	Curitiba, Brazil
2013	<b>First Certificate in English</b> , Cambridge English Qualifications	Cambridge, UK

## Publications

### International Journal of Computer Vision

Volume 129

A SHAPE-AWARE RETARGETING APPROACH TO TRANSFER HUMAN MOTION AND APPEARANCE IN MONOCULAR

VIDEOS

Apr. 2021

- Computer Vision; Computer Graphics; Motion Transfer.

### Computers & Graphics

Volume 94

LEARNING TO DANCE A GRAPH CONVOLUTIONAL ADVERSARIAL NETWORK TO GENERATE REALISTIC DANCE MOTIONS

FROM AUDIO

Feb. 2021

- Computer Vision; Computer Graphics; Motion Synthesis.

### Winter Conference on Applications of Computer Vision

Aspen, CO, United States

DO AS I DO TRANSFERRING HUMAN MOTION AND APPEARANCE BETWEEN MONOCULAR VIDEOS WITH SPATIAL AND

TEMPORAL CONSTRAINTS

Mar. 2020

- Computer Vision; Computer Graphics; Motion Transfer.

### Rio Oil & Gas Expo and Conference 2020

Rio de Janeiro, Brazil

CONNECTING REAL WORLD AND "DIGITAL TWINS" WITH MULTIVISÃO SYSTEM

Dec. 2020

- Computer Vision; Robotic; SLAM.

### International Conference on Computational Science and its Applications

Melbourne, Australia

AN RGB-BASED GESTURE FRAMEWORK FOR VIRTUAL REALITY ENVIRONMENTS

Jul. 2018

- Digital Image Processing; Computer Vision; Virtual and Augmented Reality.

### Symposium on Virtual and Augmented Reality

Curitiba, Brazil

UMA ABORDAGEM PARA DETECÇÃO GESTOS VOLTADA A AMBIENTES DE REALIDADE VIRTUAL E AUMENTADA

Nov. 2017

- Digital Image Processing; Computer Vision; Virtual and Augmented Reality.

### International Symposium on Computer Music Multidisciplinary Research

São Paulo, Brazil

THE FRAMEWORK OF COPISTA AN OMR SYSTEM FOR HISTORICAL MUSIC COLLECTION RECOVERY

Jul. 2016

- Digital Image Processing; Computer Vision; Virtual and Augmented Reality.

## Languages

**Portuguese**, Native Speaker**English**, Near native / Fluent

## Skills

**Main Skills**, Computer Vision, Machine Learning, Algorithms and Data Structure.

**Programming Languages**, Python, Java, JavaScript, C, C++.

**Management Software**, Singularity, Docker, Git, Kubernetes.

**Libraries/Frameworks**, OpenCV, PyTorch, Tensorflow.