

Vítor de Godeiro Marques

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Professional Summary

Passionate about leveraging data to extract valuable insights and solve real-world problems with a significant impact on both people and businesses. Experienced machine learning engineer proficient in Python (and various libraries like Matplotlib, Scikit-learn, Pandas, NumPy, OpenCV, e.g.), C/C++, LUA, Java, SQL, PyTorch, TensorFlow, Docker, Kubernetes, Airflow, GCP, AWS. With strong expertise in Computer Vision. I am dedicated to delivering practical solutions that make a tangible difference. Proven track record of successfully deploying machine learning applications in production environments, ensuring seamless integration and optimal performance. Committed to staying at the forefront of technological advancements and continuously expanding expertise in the field of data science, computer vision and machine learning.

Employment History

- **Computer Vision Engineer, Acertpix, São Paulo, SP, Brazil** Dec. 2021 to Present
Designed and implemented advanced deep learning models and computer vision techniques to effectively detect fraudulent documents. Developed segmentation, classification, and OCR models, achieving significant improvements in accuracy and performance. Engineered and implemented a robust ETL system in Apache Airflow to streamline data acquisition for model training. Led the successful deployment of machine learning models into production environments, optimizing infrastructure management on AWS/GCP and achieving a remarkable 30% reduction in infrastructure costs through efficient utilization of Kubernetes.
- **Machine Learning Engineer, Pix Force, Porto Alegre, RS, Brazil** Jul. 2020 to Nov. 2021
Designed and deployed cutting-edge deep learning models and advanced computer vision techniques to address Industry 4.0 challenges. Spearheaded the development of models for image segmentation and classification tasks, resulting in significant advancements. Achieved a remarkable enhancement in an OCR model, elevating its accuracy from an initial 70% to an impressive 96%.

Education

Federal University of Rio Grande do Sul (UFRGS) Porto Alegre, RS, Brazil
Master of Science in Computer Science Feb. 2023
Advisor: Prof. Manuel M. Oliveira

Federal University of Rio Grande do Norte (UFRN) Natal, RN, Brazil
Bachelor in Computer Science; CGPA: 9.48/10.00, graduated with High Distinction Dec. 2018
Advisors: Prof. Bruno Motta and Prof. Bruno Santana

Institute for Pure and Applied Mathematics (IMPA) Rio de Janeiro, RJ, Brazil
Course on 2D Computer Graphics; Grade: A⁻ Jan. 2018 to Mar. 2018
Teacher: Prof. Diego Nehab

Publications

- Alex R Cunha Lima, Arthur M Medeiros, **Vítor G Marques**, Manuel M Oliveira. *Real-time simulation of accommodation and low-order aberrations of the human eye using light-gathering trees*. The Visual Computer, Springer Berlin Heidelberg, 2021
- Carlos Diego F. da Rocha, Bruno M. Carvalho, **Vítor G. Marques**, Bruno S. Silva. *WoundArch: A Hybrid Architecture System for Segmentation and Classification of Chronic Wounds*. 14th International Joint Conference on Biomedical Engineering Systems and Technologies, HEALTHINF, 2021

- **Vítor Godeiro**, Luis R. D. da Silva, Bruno M. Carvalho, Leandson R. F. de Lucena, Marcela M. Vieira. *Deep Learning-based Pore Segmentation of Thin Rock Sections for Aquifer Characterization using Space Color Reduction*. IEEE International Conference on Systems, Signals and Image Processing (IWSSIP), 2019
- **Vítor Godeiro**, José Neto, Bruno Carvalho, Julianny Ferraz, Bruno Santana, Renata Gama. *Chronic Wound Tissue Classification Using Convolutional Networks And Color Space Reduction*. IEEE International Workshop on Machine Learning for Signal Processing (MLSP), 2018

Personal Projects

- **Where Open Stores In São Paulo** <https://github.com/vitorgodeiro/WhereOpenStoresInSP>
The project analyzes data from the city of So Paulo to recommend specific locations for opening a restaurant in a given neighborhood, targeting adults aged 25 to 50 from social classes A (income levels A1 and A2) and B (income levels B1 and B2). Based on its operation in the city of Rio de Janeiro.
- **Driver Drowsiness Detection** <https://github.com/vitorgodeiro/DrowsinessDetection>
This is a project implementing Computer Vision techniques to detect drowsiness of a driver and emit sound and luminous alert. This code can detect your eyes, mouth, head tilt and alert when the user is drowsy or sleeping.
- **Raw Image Decoder** <https://github.com/vitorgodeiro/RawImageDecoder>
This project is a raw image decoder implemented in Python. This code convert the raw image into full color image. In this pipeline we read file in pattern [R G G B] and perform the bilinear demosaic then we can choose the white balance algorithm between Gray World, White Patch, Iterative and Percentile. Finally the code run the gamma correction and give the result image.
- **Vector Graphics Rendering** <https://github.com/vitorgodeiro/VectorGraphics>
Vector Graphics Rendering developed in LUA at 2D Computer Graphics summer course at IMPA. This render is able to draw quadratic and cubic Bzier curves, transparency, linear and radial gradients, supersampling and acceleration datastructures.

Experiences

- **Teaching Assistant, Federal University of Rio Grande do Sul** Mar. 2020 to Jul.2021
Advisor: Prof. Manuel Menezes de Oliveira Neto
T.A for the courses of “Computer Graphics” and “Computational Photography”.
- **Research Assistant, Federal University of Rio Grande do Norte** Sep. 2016 to Nov. 2018
Advisor: Prof. Bruno Motta de Carvalho
We investigated algorithms to perform the segmentation of wounds as well the classification tissues as Necrotic, Granulation or Slough based on their textural properties (The Earth Mover distance) or using several convolutional networks and proposed a color space reduction methodology.
- **Software Engineer Intern, Digital Metropole Institute** Sep. 2017 to Dec. 2017
Worked to make improvements at the Labs System that is responsible for the control and planning of the activities of the laboratories of the research centers linked at the Metropole Digital Institute.
- **Research Assistant, Federal University of Rio Grande do Norte** Jan. 2015 to Jun. 2016
Advisor: Prof. Bruno Santana
We developed virtual tools to improve the quality of practice teaching in parasitology and medical entomology.

Awards

- Student Merit Medal, Best winter 2018 graduating student of the Computer Science Feb. 2019
- Best Paper in Progress, Workshop on Medical Informatics, Brazil Jul. 2017