FAGNER CUNHA
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WHO AM I?

I am a Ph.D. student at the Federal University of Amazonas (UFAM). My research focuses on computer vision and machine learning for extracting information from highly imbalanced image datasets produced by camera traps. During my Master's, I was responsible for developing deep learning models for animal species recognition on the Project Providence, a revolutionary project to develop technology to monitor the Amazon biodiversity. Previously, I had worked as an embedded software engineer in the industry.

EDUCATION

Expected 2023
Manaus, AM, Brazil

Ph.D. Student - Informatics
Advisor: Eulanda Miranda | Co-Advisor: Juan Colonna
Research area: Computer Vision

Federal University of Amazonas

04/2019
Manaus, AM, Brazil

Master's Degree - Informatics
Advisor: Eulanda Miranda | Co-Advisor: Juan Colonna
Research area: Computer Vision

Federal University of Amazonas

Thesis: A study of approaches for out-of-sample evaluation of models for animal classification in camera trap images

01/2015
Manaus, AM, Brazil

Engineer's Degree - Computer Engineering
Embedded Software Engineering, Machine Learning

Federal University of Amazonas

HONORS & AWARDS

06/2021

1st Place in the iWildCam 2021 Competition   **CVPR - FGVR Workshop**
Count the number of animals of each species present in a sequence of images.

11/2012

Best Paper Award at the Workshop of Undergraduate Research   **SBSEG**
Award received for the paper: Detection of Phishing Webpages Using Machine Learning Techniques

08/2011

Professor Abraham Moysés Cohen Award   **Federal University of Amazonas**
Best undergraduate research work in Exact Sciences at the XIX Congress of Scientific Initiation for the work: Detection of Phishing Webpages.

PUBLICATIONS

Fagner Cunha, Eulanda M. dos Santos, Raimundo Barreto, & Juan G. Colonna. Filtering Empty Camera Trap Images in Embedded Systems. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2021, pp. 2438-2446.

Fagner Cunha, Eulanda M. dos Santos, & Eduardo J. P. Souto. Detection of Phishing Webpages Using Machine Learning Techniques. In Proceedings of the 12th Brazilian Symposium on Information and Computer System Security, 2012, pp. 491-500.

PROFESSIONAL EXPERIENCE

7/2021 – present
Manaus, AM, Brazil

Undergraduate Research Mentor   **IComp - UFAM**
Responsible for mentoring 6 undergraduate students in Computer Science through their first research project using computer vision and machine learning under the Samsung UFAM Project for Education and Research (SUPER).
`Mentoring / TensorFlow / Computer Vision / Python`

4/2017 – 6/2018 Manaus, AM, Brazil	**Computer Vision Research Assistant**	**Mamiraua Institute**

I worked as a computer vision researcher on Project Providence. I was responsible for developing deep learning models for animal species recognition on the camera vision module. Tasks included:

- Analysis, cleaning, and preparation of the camera trap images dataset used for model training
- Training and evaluation of animal species classifiers using deep convolutional neural networks
- Optimizing the models to run on the Providence camera vision module, which is based on a Raspberry Pi development board

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TensorFlow / Computer Vision / Raspberry Pi / Camera Traps
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3/2015 – 3/2017 Manaus, AM, Brazil	**Computer Engineer**	**IATECAM**

I mainly worked as an embedded software engineer for projects using Altera FPGA technology. My responsibilities included:

- Develop Linux device drivers for customized IP blocks
- Develop embedded Linux applications
- Develop computer vision models for detecting soldering problems

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C / FPGA / Embedded Software / Linux / Computer Vision
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11/2013 – 3/2015 Manaus, AM, Brazil	**Software Developer**	**CETELI - UFAM**

Client: Samsung R&D Center (SIDIA)

- Developed apps for Android platform with focus on front-end: design of custom widgets, layouts, custom animations, etc.
- Developed web projects using PHP, HTML5, CSS3, JavaScript, and JQuery.

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Java / PHP / JavaScript / Android
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2/2012 – 8/2013 Manaus, AM, Brazil	**Embedded Software Engineer Intern**	**Map Innovation**

I worked on the development of an industrial data collection equipment. Tasks included::

- Develop device drivers for embedded Linux
- Customize the bootloader U-Boot
- Develop firmware for ARM using FreeRTOS
- Develop a complete functional testing system

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C / Device Drivers / Embedded Software /  Embedded Linux
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4/2008 – 1/2009 Manaus, AM, Brazil	**Electronic Engineering Intern**	**Terra da Amazonia Ltda.**

I worked on the manufacturing test engineering team responsible for the motherboards production lines. My responsibilities included identifying and fixing problems on test stations and deploying and adapting functional tests for new products.

LANGUAGES

Portuguese native
English professional working proficiency