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Adson Ileon Ripinski Duarte

ABOUT ME

Adson is a Brazilian researcher with extensive experience in machine learning and video/image processing. He holds a Bachelor's (2019) and Master's (2021) degree in Computer Science from the Federal University of Pelotas (UFPel), Brazil. During his Bachelor's program, he gained his first hands-on experience with machine learning by training supervised models for text classification. In his Master's, he deepened his expertise by applying machine learning to video coding, developing a solution to accelerate the intra-mode decision process of the H266/VVC standard. Currently, Adson is pursuing a PhD at UFPel/ViTech, where he is investigating the use of convolutional neural networks (CNNs) to optimize VVC intra-mode decisions. As a visiting researcher at the EIDOS Lab in the University of Turin, Italy, he is collaborating on innovative projects that further enhance his knowledge in deep learning and image processing. In 2025, he also became a Research Fellow at the University of Turin, where he is working on the application of deep learning techniques to medical imaging.

EDUCATION AND TRAINING

04/2025 – CURRENT Torino, Italy

RESEARCH FELLOW University of Turin

Since April 2025, I have been working as a Research Fellow at the University of Turin, collaborating with both the Department of Computer Science and the Department of Medical Sciences. My research focuses on applying deep learning techniques to the analysis of medical video data.

07/2024 – CURRENT Torino, Italy

VISITING PH.D. STUDENT University of Turin

I am visiting the EIDOS Lab research group at the Department of Computer Science, University of Turin, enhancing my knowledge in deep learning model training, including pruning techniques, as well as image and video processing techniques.

2021 – CURRENT Pelotas , Brazil

PH.D. IN COMPUTER SCIENCE Federal University of Pelotas

My PhD thesis is in the fields of video coding and deep learning, where I develop deep learning-based solutions to enhance the intra mode decision process of modern video encoders.

2019 – 2021 Pelotas , Brazil

MASTER'S DEGREE IN COMPUTER SCIENCE Federal University of Pelotas

2014 – 2019 Pelotas , Brazil

BACHELOR'S DEGREE IN COMPUTER SCIENCE Federal University of Pelotas, Brazil

LANGUAGE SKILLS

Mother tongue(s): **PORTUGUESE**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PUBLICATIONS

2024

Fast ISP Mode Decision for the Versatile Video Coding Intra Prediction Using Machine Learning

L. Araújo et al., "Fast ISP Mode Decision for the Versatile Video Coding Intra Prediction Using Machine Learning", in Proceedings of the 30th Brazilian Symposium on Multimedia and the Web, 2024, doi: https://doi.org/10.5753/webmedia.2024.241692.

2023

Fast Intra Mode Decision Using Machine Learning for the Versatile Video Coding Standard

A. Duarte et al., "Fast Intra Mode Decision Using Machine Learning for the Versatile Video Coding Standard," 2023 IEEE International Symposium on Circuits and Systems (ISCAS), Monterey, CA, USA, 2023, pp. 1-5, doi: 10.1109/ISCAS46773.2023.10181769.

2023

A Machine Learning-Based Solution to Accelerate the Intra Mode Decision for the VVC Standard

A. Duarte et al., "A Machine Learning-Based Solution to Accelerate the Intra Mode Decision for the VVC Standard." Proceedings of the 29th Brazilian Symposium on Multimedia and the Web. 2023.

2022

Fast Affine Motion Estimation for VVC using Machine-Learning-Based Early Search Termination

A. Duarte et al., "Fast Affine Motion Estimation for VVC using Machine-Learning-Based Early Search Termination," 2022 IEEE International Symposium on Circuits and Systems (ISCAS), Austin, TX, USA, 2022, pp. 1-5, doi: 10.1109/ISCAS48785.2022.9937973.

HONOURS AND AWARDS

2023

Honorable Mention at the XXIX Brazilian Symposium on Multimedia and Web Systems (WebMedia) – WebMedia

The paper "A Machine Learning-Based Solution to Accelerate the Intra Mode Decision for the VVC Standard" was awarded an Honorable Mention at the XXIX Brazilian Symposium on Multimedia and Web Systems.

2023

Highlight of the Computer Science Session, XXV Postgraduate Meeting of UFPel – Federal University of Pelotas

Presented research work, which was recognized as a highlight in the Computer Science session at the XXV Annual Postgraduate Meeting of the Federal University of Pelotas (UFPel).

RESEARCH, TEACHING, AND OUTREACH

01/2017 – 12/2018

Teaching Assistant in the Support for Teaching-Learning Activities in Computer Science Courses at the College of Engineering, UFPel

As an undergraduate, I worked as a teaching assistant for the Algorithms and Programming courses, providing support to fellow undergraduate students in understanding course materials and assignments.

01/2018 – 12/2018

Volunteer in the "Introduction to Computer Use" initiative within the Open University for Seniors extension project

I volunteered in a Brazilian extension project aimed at introducing senior citizens to computer and internet usage, helping them develop basic digital skills.

01/2015 – 12/2015

Undergraduate Researcher in the "Exploring Computational Thinking in Elementary Education" Project

As an undergraduate student, I participated in a project focused on computational thinking, where I conducted research, developed and applied activities in elementary schools in Brazil, and authored papers for Brazilian academic events.

Link https://wp.ufpel.edu.br/pensamentocomputacional/about/

WORK EXPERIENCE

09/2021 – 03/2022 Pelotas, Brazil

SOFTWARE DEVELOPER NATIONAL ASSOCIATION OF BREEDERS - HERD BOOK COLLARES

Development and maintenance of a website and database to manage and store records of cattle breeds in Brazil. Responsibilities included:

- Designing the database structure;
- Implementing user-friendly web interfaces;
- Developing backend functionalities to process and manage data efficiently;
- Ensuring data accuracy and security;
- Collaborating with stakeholders to meet specific requirements.

Website https://www.herdbook.org.br/site

CONFERENCES AND SEMINARS

23/10/2023 – 27/10/2023 São Paulo, Brazil

WebMedia: XXIX Brazilian Symposium on Multimedia and the Web

20/11/2023 – 24/11/2023 Pelotas, Brazil

XXV UFPel Postgraduate Meeting

19/10/2020 – 21/10/2020 Brazil

IEEE Seasonal School on Digital Processing of Visual Signals and Applications