

Luísa de Souza Ferreira

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EDUCATION

Rheinische Friedrich-Wilhelms-Universität Bonn Master of Science in Computer Science Bonn, Germany
2024-2026

Universidade Federal de Viçosa Bachelor's in Computer Science Viçosa, Brazil
GPA: 8.86/10 2020-2024

Thesis advisor: Michel Melo Silva

Thesis: “Automatic Identification of Relevant Moments in Security Force Videos Using Multimodal Analysis”

RESEARCH EXPERIENCE

Universidade Federal de Viçosa Viçosa, Brazil
Undergraduate Research Fellow Sep 2023 – Aug 2024

- Assisted in developing a pipeline to replicate human body movement in realistic synthetic data using Unreal Engine 5. I was responsible for integrating parametric human models (e.g. SMPL-X) and utilizing human pose and shape estimators in animating MetaHuman characters from motion captured from ordinary video data taken using a single camera.

Machine Vision and Intelligence Laboratory (UFV) Viçosa, Brazil
Undergraduate Research Assistant Sep 2022 – Aug 2024

- Developed and executed research projects as part of my research scholarships, including my Bachelor's thesis, which was on creating a multimodal algorithm to find significant moments in body camera footage of security forces based on audio and visual modalities to extract semantic information.
- Assisted in a project that developed a multimodal algorithm for creating hyperlapses, optimizing semantic content retention, visual stability, and aligning playback speed with the liveliness of an accompanying song.
- Contributed to a community project utilizing computer vision and digital image processing to convert the inside of a door to the texture of a painting in real time and provide the appearance of a portal.

Universidade Federal de Viçosa Viçosa, Brazil
Undergraduate Research Fellow Sep 2022 – Aug 2023

- Collaborated on a Computer Vision and Machine Learning project aimed at developing an accessibility system for visually impaired users.
- Curated a presenter-focused image dataset and applied image processing techniques and convolutional neural networks to detect and track individuals.
- Co-authored a paper published at SIBGRAPI 2023.

PUBLISHED PAPERS

FERREIRA, Luísa; SILVA, Michel 2025
Automatic Identification of Relevant Moments in Security Force Videos Using Multimodal Analysis.
Journal of Theoretical and Applied Informatics (Revista de Informática Teórica e Aplicada, Brazil).
doi:10.22456/2175-2745.143487

FERREIRA, Luísa; OSIAS, Ana; VIEIRA, Lucas; SILVA, Michel 2025
Portal to Other Dimensions: Using Computer Vision to Create Artwork from Daily Life Images.
Journal of Theoretical and Applied Informatics (Revista de Informática Teórica e Aplicada, Brazil).
doi:10.22456/2175-2745.143487

NEPOMUCENO, Raphael; FERREIRA, Luísa; SILVA, Michel 2024
A Multimodal Frame Sampling Algorithm for Semantic Hyperlapses with Musical Alignment.
SIBGRAPI — Conference on Graphics, Patterns and Images, 2024.
doi:10.1109/SIBGRAPI62404.2024.10716336

FERREIRA, Luísa; FERNANDES, Daniel; CERQUEIRA, Fábio; RIBEIRO, Marcos; SILVA, Michel 2023
Presenter-Centric Image Collection and Annotation: Enhancing Accessibility for the Visually Impaired.
SIBGRAPI — Conference on Graphics, Patterns and Images, 2023.
doi:10.1109/SIBGRAPI59091.2023.10347135

¹Permanent address: Porciúncula, RJ, Brazil.

OTHER PROFESSIONAL EXPERIENCE

InMedian

Web Development Intern

Viçosa, Brazil
Aug 2021 - April 2022

- Maintained a web application that was designed using Laravel for the backend and React.js for the frontend.

No Bugs

Project Analyst

Viçosa, Brazil
Jul 2021 - Aug 2022

- Acted as the main point of contact for the client-to-development team, collecting requirements, establishing the scope of the project, budgeting estimates, and having clear communication during web and app development projects.

Awards and Fellowships

Honourable Mention for Academic Performance, Universidade Federal de Viçosa 2024

Undergraduate Research Fellowship, Institutional Scientific Initiation Scholarship Program (PIBIC/CNPq) 2023

Undergraduate Research Fellowship, Institutional Scientific Initiation Scholarship Program (PIBIC/CNPq) 2022

OTHER INFORMATION

LANGUAGES

Portuguese (native), English (advanced, TOEFL 99/120)

SKILLS

Proficient: C++, Python, Tensorflow, Pytorch, Pandas, Numpy, Matlab, Git, Latex, CUDA, Linux, Docker, Singularity. Working knowledge: Verilog, R, JavaScript, Laravel, React Js., HTML/CSS.