



Washington Luis de Souza Ramos

Ph.D. Candidate in Computer Science

EDUCATION

- Mar. 2017– Present **Ph.D. in Computer Science**, *Universidade Federal de Minas Gerais (UFMG)*, Brazil.
Dissertation Title: Text-driven Hyperlapse: A Weakly-Supervised Video Acceleration Approach Using Vision-Language Modeling.
Advisors: [Prof. Erickson R. Nascimento](#) | [Dr. Leandro Soriano Marcolino](#).
- Aug. 2015– Mar. 2017 **Master of Computer Science**, *Universidade Federal de Minas Gerais (UFMG)*, Brazil.
Thesis Title: Semantic Hyperlapse for Egocentric Videos.
Advisors: [Prof. Erickson R. Nascimento](#) | [Prof. Mario F. M. Campos](#).
- Fev. 2010– Dec. 2013 **Bachelor of Computer Science**, *Pontifícia Universidade Católica de Minas Gerais (PUC-MG)*, Brazil.
Thesis Title: Face recognition with one training image per person: novel approaches using image preprocessing.
Advisor: [Alexei M. C. Machado](#).

RESEARCH INTERESTS

Computer Vision, First-Person Vision, Vision-Language Modeling, Reinforcement Learning.

AWARDS

- Oct. 2021 **Microsoft Research PhD Fellowship Award**.
Location: Microsoft Research – Link: [Full recipients list](#).
- Oct. 2021 **Best paper on Pattern Recognition and Related Fields Award**, (*second author*).
Location: SIBGRAPI 2021 - 34th Conference on Graphics, Patterns and Images – Link: [Awardees list](#).
- Oct. 2017 **Best Computer Vision/Image Processing/Pattern Recognition M.Sc. Dissertation Award**.
Location: SIBGRAPI 2017 - 30th Conference on Graphics, Patterns and Images (Workshop of Theses and Dissertations) – Link: [Awardees list](#).
- Jul. 2017 **Best Presentation of Master's Work Dissertation at 2017 Week of Graduate Seminars**.
Location: Computer Science Department at *Universidade Federal de Minas Gerais (DCC-UFMG)* – Link: [Awardees list](#).

R. Jacinto Marcelino Ferreira, 75 - 2 – Belo Horizonte, 31360-170 – Brazil

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PUBLICATIONS

- [1] **Washington Ramos**, Michel Silva, Edson Araujo, Victor Moura, Keller Oliveira, Leandro Soriano Marcolino and Erickson R. Nascimento, "**Text-driven video acceleration: A weakly-supervised reinforcement learning method**," in *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2022, doi: 10.1109/TPAMI.2022.3157198.
- [2] Diognei de Matos, **Washington Ramos**, Luiz Romanhol and Erickson R. Nascimento, "**Musical Hyperlapse: A Multimodal Approach to Accelerate First-Person Videos**," in *2021 34th SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI)*, 2021, doi: 10.1109/SIBGRAPI54419.2021.00033. 🏆 *Best paper on Pattern Recognition and Related Fields*.
- [3] M. Silva, **W. Ramos**, M. Campos and E. R. Nascimento, "**A Sparse Sampling-based framework for Semantic Fast-Forward of First-Person Videos**," in *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, vol. 43, no. 4, pp. 1438-1444, 1 April 2021, doi: 10.1109/TPAMI.2020.2983929.
- [4] **W. Ramos**, M. Silva, E. Araujo, L. S. Marcolino and E. R. Nascimento, "**Straight to the Point: Fast-forwarding Videos via Reinforcement Learning Using Textual Data**," *2020 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, Seattle, WA, USA, 2020, pp. 10928-10937, doi: 10.1109/CVPR42600.2020.01094.
- [5] **W. Ramos**, M. Silva, E. Araujo, A. Neves and E. R. Nascimento, "**Personalizing Fast-Forward Videos Based on Visual and Textual Features from Social Network**," *2020 IEEE Winter Conference on Applications of Computer Vision (WACV)*, Snowmass Village, CO, USA, 2020, pp. 3260-3269, doi: 10.1109/WACV45572.2020.9093330
- [6] M. Silva, **W. Ramos**, A. Neves, E. Araujo, M. Campos and E. R. Nascimento, "**Fast-Forward Methods for Egocentric Videos: A Review**," *2019 32nd SIBGRAPI Conference on Graphics, Patterns and Images Tutoriais (SIBGRAPI-T)*, Rio de Janeiro, Brazil, 2019, pp. 36-46, doi: 10.1109/SIBGRAPI-T.2019.00009.
- [7] M. Silva, **W. Ramos**, J. Ferreira, Felipe C. Chamone, M. Campos, E. R. Nascimento, "**A Weighted Sparse Sampling and Smoothing Frame Transition Approach for Semantic Fast-Forward First-Person Videos**," *2018 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, Salt Lake City, UT, 2018, pp. 2383-2392, doi: 10.1109/CVPR.2018.00253.
- [8] Michel M. Silva, **Washington L. S. Ramos**, Felipe C. Chamone, Joao P. K. Ferreira, Mario F. M. Campos and Erickson R. Nascimento, "**Making a long story short: A Multi-Importance fast-forwarding egocentric videos with the emphasis on relevant objects**," *Journal of Visual Communication and Image Representation (JVCI)*, vol. 53, pp. 55-64, 2018, doi: 10.1016/j.jvcir.2018.02.013.
- [9] **Washington L. S. Ramos**, Mario F. M. Campos, Erickson R. Nascimento, "**Semantic Hyperlapse for Egocentric Videos**," *Workshop of Thesis and Dissertations at SIBGRAPI 2017 - 30th Conference on Graphics, Patterns and Images (WTD@SIBGRAPI)*, Niterói, RJ, Brazil, 2017. 🏆 *Best Computer Vision/Image Processing/Pattern Recognition M.Sc. Dissertation*.
- [10] M. M. Silva, **W. L. S. Ramos**, J. P. K. Ferreira, M. F. M. Campos, E. R. Nascimento, "**Towards Semantic Fast-Forward and Stabilized Egocentric Videos**," *First International Workshop on Egocentric Perception, Interaction, and Computing at European Conference on Computer Vision (EPIC@ECCV)*, Springer, Cham, 2016, pp. 557-561, doi: 10.1007/978-3-319-46604-0_40
- [11] **W. L. S. Ramos**, M. M. Silva, M. F. M. Campos, E. R. Nascimento, "**Fast-Forward Video Based on Semantic Extraction**," *IEEE International Conference on Image Processing (ICIP)*, Phoenix, AZ, 2016, pp. 3334-3338, doi: 10.1109/ICIP.2016.7532977

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EXPERIENCE

Sep. 2019– **Visiting Researcher**, *Lancaster University*, United Kingdom.

Mar. 2020 **Developed Tasks:**

- Develop research on Vision-Language models and Multi-Agent Systems;
- Prepare/submit research papers to top venues in Computer Vision;
- Prepare and give a talk about the research being developed.

Aug. 2018– **Teaching Assistant**, *Universidade Federal de Minas Gerais*, Brazil.

Dec. 2018 **Topics:**

- Introduction to variables, conditional statements, and iterators;
- Arrays, strings, and functions;
- Recursion and I/O.

Developed Tasks:

- Assisted the teacher in the activities carried out during the semester, more specifically in the preparation and correction of coding works;
- Assisted the students in doubts regarding the content of the course and/or the work to be done during the monitoring classes.

Aug. 2016– **Teaching Assistant**, *Universidade Federal de Minas Gerais*, Brazil.

Dec. 2016 **Topics:**

- Introduction to variables, conditional statements, and iterators;
- Arrays, recursion, and pointers.

Developed Tasks:

- Assisted the teacher in the classroom in exam days;
- Assisted the teacher in the activities carried out during the semester, more specifically in the preparation and correction of coding works;
- Assisted the students in doubts regarding the content of the course and/or the work to be done during the monitoring classes.

Jan. 2014– **Software Developer**, *Eteq Tecnologia*, Brazil.

Jul. 2015 **Roles:**

- Develop new functionalities and maintain web-based software, mostly a hospital network management software;

Technologies used:

- JavaEE, JavaServer Faces (JSF), Ruby on Rails, and MySQL;

Jul. 2013– **Software Developer Intern**, *Eteq Tecnologia*, Brazil.

Dec. 2013 **Roles:**

- Develop new functionalities and maintain web-based software, mostly a hospital network management software;

Technologies used:

- JavaEE, JavaServer Faces (JSF), and MySQL;

Aug. 2012– **Undergraduate Researcher**, *Pontifícia Universidade Católica de Minas Gerais*, Brazil.

Jul. 2013 **Developed Tasks:**

- Worked on the development of methods/techniques for face recognition;
- Produced a prototype to match people's facial characteristics to famous artists worldwide.

Feb. 2012– **Software Developer Intern**, *Pontifícia Universidade Católica de Minas Gerais*, Brazil.

Jul. 2012 **Roles:**

- Develop web pages using JavaEE, HTML, XHTML, CSS, JavaScript, Java Server Pages (JSP), JavaServer Faces (JSF), and PostgreSQL.

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May. 2010– **Volunteer Monitor in Recycling, Assembly, and Maintenance of Computers**, *Pontifícia Universidade Católica de Minas Gerais*, Brazil.

Developed Tasks:

- Instructed on assembly and maintenance of micros, and their respective recycling processes;
- Produced a small student's book containing details in the machine assembling and a posterior recycling process.

Jul. 2010– **IT Technician Intern**, *Pontifícia Universidade Católica de Minas Gerais*, Brazil.

Roles:

- Support users in using the academic network, installing and updating software, solving problems with the academic network, and troubleshooting computers and peripherals.

SKILLS

PROGRAMMING LANGUAGES Python, C/C++, MATLAB, Java, JavaScript, Ruby

LANGUAGES

PORTUGUESE Native
ENGLISH Fluent

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