

Lucas S. Althoff

Assistant Professor
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Resume

Lucas S. Althoff é Professor Assistente do Centro Universitário de Brasília (CEUB). Lucas concluiu seu doutorado (Ph.D.) na Universidade de Brasília em 2023, sobre qualidade de experiência em multimídia imersiva. Em 2014, formou-se em Física Computacional, e concluiu o premiado mestrado em Física e Educação em 2018, na Universidade de Brasília. Ele trabalhou como Engenheiro de Pesquisa no laboratório XLIM (França, 2022) e colaborou como Cientista de Dados e Desenvolvedor de Software em uma série de projetos de pesquisa ou start-ups em várias áreas, como Telecomunicações, Gamificação, Epidemiologia, Engenharia de Processos e Cidades Inteligentes. Seus interesses de pesquisa incluem aplicações de realidade virtual e experiência do usuário. Ele revisa regularmente artigos sobre Ferramentas e Aplicações Multimídia, IEEE ACCESS; e recentemente foi premiado como melhor artigo na conferência WebMedia.

Research Interest

- Virtual reality, user experience, data analytics, machine-learning;
- Multimedia quality assessment, image processing, visual attention;
- Cinematography, video editing, video storytelling.

Education

- **Ph. D. in Informatics.** February/19 – 2023.
Computer Science Department, University of Brasília. Advisor: Prof. Mylène C. Q. Farias
- **M.Sc in Physics Education.** July/16 – December/18.
National Mastership Physics Education Program, University of Brasília.
- **Major in physics.** July/16 - July/17.
University Catholic of Brasília.
- **B.Sc. in Computational Physics.** August/09 - July/14.
Computer Science Department, University of Brasília.

Awards

- Best Paper from the Brazilian Symposium on Multimedia and the Web November/2022.
- Best Dissertation Paper in Proeb/Capes from the M.Sc Program MNPEF. December/2018.
- Best paper submitted at XXIV IJCIEOM 2018, paper included as a book chapter. July/2018.

Research Position Held

1. **Research Engineer - Université de Poitiers - XLIM lab.** Jan/2022 – Aug/2022.
Research in the field of subjective quality assessment of immersive multimedia. I collaborate with a senior researcher, performing a meta-analysis on the reliability of subjective quality assessment of omnidirectional images/videos. Advisor: Prof. Muhammed-Chaker Larabi.
2. **Research Assistant - FAPESP Research Project** March/2022–Mai/2022.
Research Project: Perceptually-Efficient Streaming of 360-degrees Edited Video
Project focused on optimizing streaming 360-degree video. Conducted subjective experiments, developed tools for 360 saliency prediction models, integrate design 360-degree video streaming. Advisors: Prof. Ravi Prakash, Prof. Marcelo M. Carvalho, Prof. Mylène C. Q. Farias.

3. **Research Intern – Laboratoires Mixtes Internationaux** Mai/2021 – Mai/2022.
Cross-border Observatories for the Environment, Climate and Vector Diseases
Perform Analytics and Extract, Transform and Load (ETL) procedures for cross-border epidemiological data integration and harmonization, with the application to malaria in the cross-border area between French Guiana and Brazil. Advisor: Prof. Emmanuel Roux.
4. **Research Assistant – University of Brasília - Research Project,** Aug./2018 –Aug./2020.
Research Project: Automation and Improvement of Business Process.
Project in the field of Production Eng. & Software Eng. applied to the field of 4.0 industry. I was responsible for leading a team and coordinating the research results. Advisors: Prof. Ari M. Mariano, Prof. Simone B. S. Monteiro

Selected Publications

Journal Papers

- 2023 **Impact of Alignment Edits on the Quality of Experience of 360° Videos**, Lucas S. Althoff, Mylène C. Q. Farias, Alessandro Rodrigues, and Marcelo M. Carvalho, IEEE Access.
<https://doi.org/10.1109/ACCESS.2023.3319346>

Peer-reviewed Conferences

- 2022 **360RAT: A Tool for Annotating Regions of Interest in 360-degree Videos** Lucas S. Althoff, Myllena A. Prado, Sana Alamgeer, Alessandro Silva, Ravi Prakash, Marcelo M. Carvalho and Mylène C. Q. Farias. Proceedings of the Brazilian Symposium on Multimedia and the Web
<https://dl.acm.org/doi/10.1145/3539637.3557930>
- 2022 **Once Learning for Looking and Identifying Based on YOLO-v5 Object Detection**, Lucas S. Althoff, Mylène C. Q. Farias and Li Weigang. Proceedings of the Brazilian Symposium on Multimedia and the Web.
<https://dl.acm.org/doi/10.1145/3539637.3557929>
- 2021 **A Content-Based Viewport Prediction Model**, Dario D. Morais, Lucas S. Althoff, Ravi Prakash, Marcelo M. Carvalho, and Mylène C. Q. Farias. Electronic Imaging.
<https://library.imaging.org/ei/articles/33/9/art00016>
- 2021 **Ethical Perspectives in AI: A Two-folded Exploratory Study From Literature and Active Development Projects**, José A. S. de Cerqueira, Lucas S. Althoff, Paulo De Almeida, and Edna Canedo, HICSS.
<http://hdl.handle.net/10125/71257>
- 2019 **Exploring Active Learning Resources for Team Training in a Multidisciplinary Research Project**, Lucas S. Althoff, Camila M. A. Silva, Patrícia M. Milhomem, and Ana Carla B. Reis. PAEE/ALE - 11th International Symposium on Project Approaches in Engineering Education (PAEE) 16th Active Learning in Engineering Education Workshop.

Book Chapter

- 2019 **A bibliographic review of Software Metrics: applying the Consolidated Meta-Analytic Approach**, Ari Melo Mariano, Ana Carla Bittencourt Reis, Lucas dos Santos Althoff, Laís Bandeira Barros In: Springer Proceedings in Mathematics & Statistics (Awarded paper, XXIV IJCIEOM 2018).
https://doi.org/10.1007/978-3-030-14969-7_21

Participation as Research Reviewer

- Voluntary reviewer (ACM Multimedia Tools and Application, IEEE VR, SVR 2021, VRST 2020)
- Voluntary at Society for Imaging Science and Technology (EI2022)

Graduation Defense Committee Member

- **Analysis of Saliency Models for 360° Videos**, Bernardo Magalhães Morales, Part of Electrical Engineering Conclusion Graduation, University of Brasília, 2019. Defense committee members: Mylène

- C. Q. de Farias (Advisor), João Luiz Azevedo de Carvalho, Lucas dos S. Althoff.
- **Annotation of Regions of Interest for 360° Videos**, Myllena de Almeida Prado, Part of Mecatronic Engineering Conclusion Graduation, University of Brasília, 2021. Defense committee members: Mylène C. Q. de Farias (Advisor), João Luiz Azevedo de Carvalho, Lucas S. Althoff.
 - **Protótipo WebSig para Suporte à Produção Cartográfica do Laboratório de Geografia, Ambiente e Saúde da Universidade de Brasília**, Guilherme Felix Menezes, University of Brasília, 2020. Defense committee members: Helen Gurgel (Advisor), Emmanuel Roux, Lucas S. Althoff.
 - **O Uso de Elementos da Gamificação no Processo de Avaliação da Aprendizagem: Uma Análise Bibliométrica**, Victor Hugo M. Rodrigues, University of Brasília 2023 Defense committee members: Jorge Henrique Cabral Fernandes (Advisor), Edison Ishikawa, Lucas S. Althoff.
 - **Análise Bibliométrica do Pensamento Computacional na Educação**, Breno R. Corrêa, University of Brasília 2023 Defense committee members: Jorge Henrique Cabral Fernandes (Advisor), Edison Ishikawa, Lucas S. Althoff.

Complementary Skills

- Programming languages:
 - Python (Advanced),
 - R (Intermediary),
 - Javascript (Intermediary),
 - C# (Intermediary),
 - PHP (Basic),
- Machine Learning packages:
 - Pytorch (Intermediary),
 - Tensorflow (Intermediary),
- Data Science:
 - Spark,
 - Pandas.
- CI/CD:
 - Argo (Intermediary),
 - Jenkins (Intermediary),
 - Kubernetes (Intermediary),
- Extra tools: Adobe Premiere, Latex, Unity, Unreal Engine;
- Language:
 - English professional proficiency - B2 TOEFL\itp
 - French Intermediary