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Education

2004	**Ph.D. in Electrical and Computer Engineering**, University of California, Santa Barbara, CA, Dissertation title: "No-Reference and Reduced Reference Video Quality Metrics: New Contributions", Advisor: Dr. Sanjit K. Mitra.
1998	**M.Sc. in Electrical and Computer Engineering**, State University of Campinas, Dissertation title: "Wavelet Transform Applications in Image Compression," Advisor: Dr. Amauri Lopes.
1994	**B.Sc. in Electrical Engineering**, Federal University of Pernambuco, Undergraduate emphasis on Information Theory and Signal Processing.

Professional Experience

2023 - now	Associate Professor, Department of Computer Science, Texas State University, San Marcos, TX
2018 - 2022	Associate Professor, Electrical Engineering Department, University of Brasilia, Brazil.
2012 - 2018	Tenured Assistant Professor, Electrical Engineering Department, University of Brasilia, Brazil.
2009 - 2012	Assistant Professor, Computer Science Department, University of Brasilia, Brazil.
2008 - 2009	Assistant Professor, Computer Science Department, Federal University of São Paulo, Brazil.
2006 - 2007	Post-Doctoral Researcher at the Federal University of Campina Grande, Brazil.
2005 - 2006	Research Staff Member at Intel Corp., Arizona, US.
2004 - 2005	Post Doctoral Researcher at the University of Santa Barbara, US.
2002 - 2002	Intern Researcher at Philips Research, The Netherlands.
1997 - 1998	Research Engineer at CPqD, Campinas, SP, Brazil.

Other Positions

2018 - 2019	Visiting Researcher Scholar at the Computer Science Department, University of Texas at Dallas, TX, US (1 year).
2011 - 2015	Visiting Research Scholar at the Computer Science Department, University of Delft, Delft, The Netherlands (45 days each year, during 4 years).

Interests

Research:	Visual Quality, Human Perception, Visual Attention, Image and Video Processing, Watermarking, Tampering.
Teaching:	Digital Image Processing, Computer Vision, Data Structures, Multimedia Signal Processing, Signals and Systems, Circuit Theory, Computer Architecture.

Professional Activities

- **Co-Editor in Special Issues:**
  - "Scene-Content and Vision-Dependent Factors in Image Quality Assessment", Mylene Farias, John Jarvis, Sophie Triantaphillidou, Robin Jenkin, and Seyed Ali Amirshahi, Frontiers in Neuroscience, 2024.
  - "Learning-based Quality Prediction for Advanced Media", Aladine Chetouani, Sebastian Bosse, Heinrich Hertz, Patrick Le Callet, Mylene Farias, Johannes Ballé, Jing Li, Journal of Selected Topics in Signal Processing, 2024.
  - "Scene-Dependent Image Quality and Visual Assessment", Mylene Farias, John Jarvis, Sophie Triantaphillidou, Robin Jenkin, Frontiers in Neuroscience, May 2023.
- **Committees in Professional Societies:**
  - Member of the IEEE International Conference of Multimedia and Expo (ICME) Steering Committee;
  - Vice-President at the board of directors of the Society for Imaging Science and Technology - IS&T (05/2025-current);
  - 2023 IS&T Honor and Award Committee;
  - 2023 Elsevier Signal Processing: Image Communication Journal Award;
  - Committee Member of the Multimedia Signal Processing Technical Committee- MMSP-TC (2023-2025, 2026-2028);
  - Committee Member of the Image, Video, and Multidimensional Signal Processing Technical Committee - IVMSP-TC (2021-2023, 2024-2026);
- **Journal Editorial Board:**
  - SPS Representative, IEEE Multimedia Magazine Editorial Board (01/2024 - 12/2025, 1/2026 - 12/2027);
  - Associate Editor, SPS Signal Processing Magazine eNewsletter (02/2024 - current);
  - Senior Area Editor, IEEE Signal Processing Letters (03/2024 - current);
  - Associate Editor, IEEE Transactions on Circuits and Systems for Video Technology (01/2024 - current);
  - Area Editor, Elsevier Signal Processing: Image Communication (09/2020 - current).
  - ACM SIGMM Records - Social Media (2019 - current).
  - Associate Editor, Displays Elsevier (11/2022-07/2024);
  - Associate Editor, IEEE Signal Processing Letters (12/2018 - 01/2024);
  - Associate Editor, SPIE Journal of Electronic Imaging (05/2021 - 01/2024).
- **Area Chair:**
  - IEEE Intern. Conference on Image Processing - ICIP (2019, 2020, 2021, 2022, 2023, 2024, 2025);
  - IEEE Intern. Conference on Multimedia and Expo (2021, 2022, 2023, 2024, 2025, 2026);
  - ACM International Conference on Multimedia (2021, 2022, 2023, 2024, 2025);
  - IEEE International Conference on Acoustics, Speech and Signal Processing (2023, 2024, 2025, 2026);
  - Associate Chair ACM International Conference on Interactive Media Experiences - IMX (2021).
- **Conference Co-Chair:**
  - 2024 IMX in Latin America Workshop (IMX-LATAM), co-located with ACM International Conference on Interactive Media Experiences - IMX;
  - 2022 - 1st Workshop on Photorealistic Image and Environment Synthesis for Multimedia Experiments, co-located with ACM Multimedia Conference - MM;
  - 2022 ACM Multimedia Systems Conference - MMSys;

  - Short Course Co-Chair for Electronic Imaging (2022-2025);
  - Electronic Imaging: Image Quality and System Performance (2020-2022).

- **Technical Program Co-Chair:**
  - 2028 ACM International Conference on Multimedia;
  - 2027 IEEE International Workshop on Multimedia Signal Processing (MMSP);
  - 2026 ACM International Conference on Multimedia;
  - 2025 ACM International Conference on Interactive Media Experiences - IMX;
  - 2023 International Workshop on Immersive Mixed and Virtual Environment Systems (MMVE), co-located with CM Multimedia Systems Conference - MMSys;
  - 2022 IEEE Intern. Conf. on Quality of Multimedia Experience - QoMEX;
  - 2021 ACM Workshop on Network and Operating System Support for Digital Audio and Video - NOSSDAV;
  - 2020 IEEE Intern. Conf. on Quality of Multimedia Experience - QoMEX;

- **Others:**
  - Exhibits/Demo/Video Program Chair, 2027 ACM International Conference on Multimedia;
  - Publicity co-chair, 2026 ACM International Conference on Interactive Media Experiences (IMX);
  - Satellite Workshop co-chair, 2025 IEEE Intern. Conference on Multimedia and Expo;
  - Tutorial co-chair, 2025 IEEE Intern. Conference on Image Processing - ICIP;
  - Publicity Chair, 2025 IEEE International Workshop on Multimedia Signal Processing - MMSP;
  - Publicity and Social Media Chair, 2024 IEEE Intern. Conf. on Quality of Multimedia Experience - QoMEX;
  - International Liaison Co-Chair, 2024 IEEE International Workshop on Multimedia Signal Processing - MMSP;
  - Diversity Chair, 2021-2022 IEEE Intern. Conf. on Quality of Multimedia Experience - QoMEX;
  - Diversity Chair, 2022 ACM International Conference on Interactive Media Experiences - IMX.

- **Member of Technical Program Committees:** IEEE International Symposium on Image and Signal Processing and Analysis (2023, 2022, 2021), ACM Multimedia and Systems - MMSys (2023), ACM Conference on Interactive Media eXperiences (2021), ICME Workshop of Immersive Media Compression (2023), Electronic Imaging: Image Quality and System Performance (2018-current), ACM Multimedia (2019, 2020), International Workshop on Immersive Mixed and Virtual Environment Systems (MMVE 2019), IEEE Intern. Conf. on Quality of Multimedia Experience - QoMEX (2025, 2022, 2020, 2014-2018), European Workshop on Visual Information Processing (2020, 2019, 2018, 2010), Conference on Graphics, Patterns and Images - SIBGRAPI (2020, 2019, 2017), Workshop on Quality of Multimedia Services - QUAMUS (2016-2018), Symposium on Emerging Topics in Computing and Communications (2017), Workshop on Video Processing and Quality Metrics - VPQM (2010-2015), Intern. Conf.on Multimedia Modeling (2012-2017, 2020), Simpósio Brasileiro de Sistemas Multimídia e Web - WebMedia (2021).

- **Journal Reviewer** (Detailed list at https://publons.com/a/1084784): IEEE Transactions on Image Processing, SPIE Journal of Electronic Imaging, IEEE Transactions on Multimedia, IEEE Signal Processing Letters, Elsevier Signal Processing: Image Communication, Springer Multidimensional Systems and Signal Processing, Elsevier Signal Processing, Elsevier Digital Signal Processing, Elsevier Journal of Visual Communication and Image Representation, ACM Transactions on Multimedia Computing, Communications and Applications, IET Electronics Letters, IET Image Processing, MDPI Sensors, SPIE Optical Engineering, IEEE Transactions on Mobile Computing, IEEE Transactions on Broadcasting, IEEE Transactions on Audio, Speech and Language Processing, IST Journal of Imaging Science and Technology, Elsevier Computers & Graphics.

- **Member of Funding Agency Committees**: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) - Brazil.

- **Society Memberships:** Senior IEEE Member, IEEE Signal Processing Society Member, IEEE Women in Engineering, ACM Member, SPIE Member.

Honors, Awards, and Accomplishments

- 2022: Best student paper award for "Deep Learning-Based Light Field Image Quality Assessment Using Frequency Domain Inputs", in IEEE Intern. Conf. on Quality of Multimedia Experience - QoMEX, co-authored with Sana Alamgeer.
- 2019: Best student paper award for "Analyzing the influence of cross-modal IP-based degradations on the perceived audio-visual quality", in Image Quality and System Performance, IST Electronic Imaging, co-authored with Helard Becerra.
- 2018: Best Paper Award in the Workshop of Theses and Dissertations in the category Image Processing/Computer Vision/Pattern (Thesis "Using Texture Measures for Visual Quality Assessment" Pedro Freitas), SBC - SIBGRAPI.
- 2017: Best student paper award for "Blind Image Quality Assessment Using Multiscale Local Binary Patterns," in Image Quality and System Performance, IST Electronic Imaging, co-authored with Pedro Freitas and Welington Akamine.
- 2016: Best paper for "High Dynamic Range Tone Mapping Algorithm Based on Image Feature Maps," in the Workshop of Undergraduate Works, Conference on Graphics, Patterns and Images (SIBGRAPI), co-authored with Matheus Santos.
- 2015: Honorable Mention Award for the paper "Embedding Color Watermarks into Halftoning Images using Minimum-Distance Binary Patterns," Conference on Graphics, Patterns and Images (SIBGRAPI), co-authored with Pedro Freitas.
- 2012: Best paper for "Studying The Added Value of Visual Attention in Objective Image Quality Metrics," in the Workshop of Undergraduate Works, Conference on Graphics, Patterns and Images (SIBGRAPI), co-authored with Welington Akamine.
- 2005: Paper "Detectability and Annoyance of Synthetic Blockiness, Blurriness, Noisiness, and Ringing in Video Sequences" rated among the top papers in its category, co-authored with Sanjit Mitra.
- 2004: Paper "Detectatiblity and Annoyance of Synthetic Blurring and Ringing in Video Sequences" rated among the top papers in its category by the reviewers, co-authored with Sanjit Mitra.

Scholarships

- 2013-now: Research (Productivity) Scholarship by the Brazilian National Council for Scientific and Technological Development (CNPq), Brazil.
- 1998-2002: Full Ph.D. Scholarship (Tuition fees, stipend) by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES).
- 1995-1997: Master's Scholarship by the Brazilian National Council for Scientific and Technological Development (CNPq).
- 1993-1994: Undergraduate research scholarship by the Brazilian National Council for Scientific and Technological Development (CNPq), Electrical Engineering Department, Federal University of Pernambuco, Brazil.
- 1991-1992: Undergraduate research scholarship by the Brazilian National Council for Scientific and Technological Development (CNPq), Physics Department, Federal University of Pernambuco, Brazil.

Outreach Activities

- Co-Organizer of the **Women in Engineering** Celebration week in the Technology of the the University of Brasília (June-2022);
- Co-Founder and Advisor chair of the **IEEE Women in Engineering Chapter** in the University of Brasília (2012 - now);
- Co-organized the **1st Week of Women in Engineering** of the Technology College of the University of Brasília (2018).

- Co-organized the **Workshop Women in Technology** (WiT), as part of the Brazilian Software Engineering Congress (CBSoft) in the Brazilian Computer Society (2013).
- Member and co-organizer of the panel "Are we in balance yet? Stories from different continents about academia" in the **Grace Hopper** Celebration for Women in Computing Conference on October 3-6, 2012 in Baltimore, Maryland USA.
- Member of the outreach program **Computing Girls** (Meninas na Computação) of the Department of Computer Science of the University of Brasília. (2009-2012).

Administrative Experience

- 2012-2018: Member of the Graduate Council of the Graduate Program in Electronics and Control Systems Engineering, Department of Electrical Engineering, University of Brasília, Brazil;
- 2016-2018: Director of the Graduate Program in Electronics and Control Systems Engineering, Department of Electrical Engineering, University of Brasília, Brazil;
- 2011-2013: Director of the Graduate Program in Computer Science, Department of Computer Science, University of Brasília, Brazil.

Grants and Contracts

Follows the list of projects for which I am the principal investigator or a co-principal invenstigator. The values reported were converted from Brazilian Real. Therefore, one should take into account that consumer prices (including rent) in United States are 120.94% higher than in Brazil [1].

- 2022: Project with Justice Ministry for identification of individuals driving under influence. Funding includes salaries for 1 Ph.D. student, 3 master students, and 3 undergraduate. It also includes equipments (computer, tablets, smart glasses, etc.) for the execution of the project.
- 2022-2023: Research collaboration grant with the University of Poitiers, France (Prof. Chaker Larabi), which includes the salary of 2 Ph.D. students and a co-tutelle Ph.D. agreement.
- 2022-2024: Research (Productivity) Scholarship from the Brazilian National Council for Scientific Technological Development(CNPq), Brazil.
- 2022-2024: Research project funded by FAPDF (State Research Agency) entitled "Automatic disease identification using dental medical images," (BRL 976,000.00). Research team includes researchers in engineering, computer science, and health. Funding consists of equipment (3 computer servers for machine learning), 9 Ph.D. and 9 M.Sc. scholarships.
- 2021: Laboratory of Tests for the Brazilian Digital Television Project - TV 3.0 (https://forumsbtvd.org.br/tv3_0/. Funding was provided by Brazilian Ministry of Communications and consists of scholarships and salaries for 10 researchers, including 3 M.Sc. graduates, 5 engineers and 2 professors.
- 2019-2021: FAPESP/MCTIC, Co-PI of Project "Perceptually-Efficient Streaming of 360-degree Edited Video" (US$ 50,000). Funding includes 2 Ph.D. scholarships and equipment.
- 2020-2022: BRICS STI Framework Programme 3 coordinated call for BRICS multilateral projects, Project "Hybrid Methods for Radiological Medical Image Analysis and Pathological Grading Prediction" (US$ 50,000 per year).
- 2009-2019: Undergraduate research scholarships, 2 scholarships per year (US$ 2,460 per year).
- 2018-2019: NVIDIA GPU Grant for the project "Quality of Experience of Immersive Multimedia Applications" (equipment valued at US$ 5,500).
- 2019-2021: Research (Productivity) Scholarship by the Brazilian National Council for Scientific Technological Development(CNPq), Brazil (US$ 10,500).

[1] https://www.numbeo.com/cost-of-living/compare_countries_result.jsp?country1=Brazil&country2=United+States&displayCurrency=USD

- 2017-2019: Coordinator and Principal Investigator of "No-Reference Image Quality Assessment Methods Using Local Binary Patterns Variants," Research Agency of the Brazilian Federal District (US$ 16,000 + 4 undergraduate scholarships).
- 2016-2018: Research (Productivity) Scholarship by the Brazilian National Council for Scientific and Technological Development (CNPq), Brazil (US$ 10,500).
- 2014-2018: Coordinator and Principal Investigator of "Modeling Digital Video Quality in Transmission Scenarios," Brazilian National Council for Scientific and Technological (CNPq) (US$ 22,000).
- 2013-2015: Research (Productivity) Scholarship by the Brazilian National Council for Scientific and Technological Development (CNPq), Brazil (US$ 10,500).
- 2011-2015: Coordinator and Principal Investigator of "VARIUM - Visual ARtifacts Interference Understanding and Modeling," International Collaboration Project. Funding 2 trips per year to The Netherlands (travel expenses and stipends) and 2 Ph.D. exchange scholarship of one year (travel expenses, health insurance, and stipends).
- 2010-2012: Productivity in Research Scholarship by the Brazilian National Council for Scientific and Technological Development(CNPq), Brazil (US$ 10,500).
- 2008-2010: Coordinator and Principal Investigator of "Objective Quality Metrics for the Brazilian Digital Television System," Brazilian National Council for Scientific and Technological Development (CNPq) (US$ 20,000).

Impact and Citations

- **Google Scholar**: 3,071 citations (1,584 since 2020), h-index: 28 (19 since 2020), i10-index: 66 (35 since 2022);
- **Scopus** (Author ID: 34769791900): h-index: 21.

Journal Publications

[J1] M. Irshad, C. Sanchez-Ferreira, S. Alamgeer, C. H. Llanos, and M. C. Farias, "No-reference underwater image quality assessment based on a convolutional neural network," *Journal of Electronic Imaging*, vol. 34, no. 5, pp. 053 041–053 041, 2025.

[J2] G. De Castro Araújo, H. Domingues Garcia, M. C. Farias, R. Prakash, and M. M. Carvalho, "A 360-degree video player for dynamic video editing applications," *ACM Transactions on Multimedia Computing, Communications and Applications*, 2025.

[J3] S. Alamgeer, M. Irshad, and M. C. Farias, "Assessing the quality of light field images: A graph-based approach," *Journal of Imaging Science and Technology*, vol. 69, no. 4, pp. 1–7, 2025.

[J4] Y. Zhang, D. M. Chandler, and M. C. Farias, "Motion deblurring via multiscale residual convolutional dictionary learning," *Digital Signal Processing*, p. 105337, 2025.

[J5] B. S. S. Dias, R. Querrer, P. T. Figueiredo, A. F. Leite, N. S. de Melo, L. R. Costa, M. F. Caetano, and M. C. Farias, "Osteoporosis screening: leveraging efficientnet with complete and cropped facial panoramic radiography imaging," *Biomedical Signal Processing and Control*, vol. 100, p. 107031, 2025.

[J6] J. A. Lima, C. J. Miosso, and M. C. Farias, "Synflowmap: A synchronized optical flow remapping for video motion magnification," *Signal Processing: Image Communication*, vol. 130, p. 117203, 2025.

[J7] Q. Yang, Y. Zhang, D. M. Chandler, and M. C. Farias, "SSRT: Intra-and cross-view attention for stereo image super-resolution," *Multimedia Tools and Applications*, vol. 84, no. 20, pp. 22 917–22 945, 2024.

[J8] A. Chetouani, S. Bosse, P. Le Callet, M. Farias, J. Ballé, and J. Li, "Editorial advancements in learning-based quality prediction for advanced visual media," *IEEE Journal of Selected Topics in Signal Processing*, vol. 17, no. 6, pp. 1148–1149, 2024.

[J9] E. Peixoto, P. Freitas, M. Farias, J. E. Medeiros, F. Guimarães, F. Dionísio, G. Menezes, V. Merlo, L. Fausto, and C. Cosme, "A subjective quality evaluation procedure for bitrate determination of tv 3.0 videos," *SET INTERNATIONAL JOURNAL OF BROADCAST ENGINEERING*, vol. 10, 2024.

[J10] L. S. Althoff, M. C. Farias, A. R. Silva, and M. M. Carvalho, "Impact of alignment edits on the quality of experience of 360° videos," *IEEE Access*, 2023.

[J11] P. G. Freitas, R. Diniz, and M. C. Q. de Farias, "Assessing the quality of 3d point clouds using descriptors for color and geometry texture," *Brazilian Journal of Development*, vol. 9, no. 05, pp. 17 415–17 431, 2023.

[J12] P. G. Freitas, R. Diniz, and M. C. Farias, "Point cloud quality assessment: unifying projection, geometry, and texture similarity," *The Visual Computer*, vol. 39, no. 5, pp. 1907–1914, 2023.

[J13] S. Alamgeer and M. C. Farias, "A two-stream cnn based visual quality assessment method for light field images," *Multimedia Tools and Applications*, vol. 82, no. 4, pp. 5743–5762, 2023.

[J14] M. C. Farias, D. Yong, and A. S. Krylov, "On the intelligent medical image analysis and processing," *Computational Mathematics and Modeling*, p. 1, 2023.

[J15] S. Alamgeer and M. C. Farias, "A survey on visual quality assessment methods for light fields," *Signal Processing: Image Communication*, vol. 110, p. 116873, 2023.

[J16] M. Farias, P. de Castro Oliveira, G. dos Santos Lopes, C. Miosso, and J. Lima, "The influence of magnetic resonance imaging artifacts on cnn-based brain cancer detection algorithms," *Computational Mathematics and Modeling*, pp. 1–19, 2023.

[J17] S. Alamgeer and M. C. Farias, "Blind visual quality assessment of light field images based on distortion maps," *Frontiers in Signal Processing*, vol. 2, p. 815058, 2022.

[J18] A. A. Dovganich, A. V. Khvostikov, Y. A. Pchelintsev, A. A. Krylov, Y. Ding, and M. C. Farias, "Automatic out-of-distribution detection methods for improving the deep learning classification of pulmonary x-ray images," *Journal of Image and Graphics*, vol. 10, no. 2, pp. 56–63, 2022.

[J19] R. Diniz, P. G. Freitas, and M. C. Farias, "Point cloud quality assessment based on geometry-aware texture descriptors," *Computers & Graphics*, vol. 103, pp. 31–44, 2022.

[J20] S. Alamgeer and M. C. Farias, "A two-stream cnn based visual quality assessment method for light field images," *Multimedia Tools and Applications*, pp. 1–20, 2022.

[J21] S. Alamgeer, M. Irshad, and M. C. Farias, "Cnn-based no-reference video quality assessment method using a spatiotemporal saliency patch selection procedure," *Journal of Electronic Imaging*, vol. 30, no. 6, p. 063001, 2021.

[J22] Y. Ding, S. Ruan, Y. Wang, J. Shao, R. Sun, W. Tian, N. Xiang, W. Ge, X. Zhang, K. Su *et al.*, "Novel deep learning radiomics model for preoperative evaluation of hepatocellular carcinoma differentiation based on computed tomography data," *Clinical and translational medicine*, vol. 11, no. 11, p. e570, 2021.

[J23] H. Becerra Martinez, A. Hines, and M. C. Farias, "Perceptual quality of audio-visual content with common video and audio degradations," *Applied Sciences*, vol. 11, no. 13, p. 5813, 2021.

[J24] R. Diniz, M. Q. Farias, and P. Garcia-Freitas, "Color and geometry texture descriptors for point-cloud quality assessment," *IEEE Signal Processing Letters*, 2021.

[J25] G. J. Ansari, J. H. Shah, M. C. Farias, M. Sharif, N. Qadeer, and H. U. Khan, "An optimized feature selection technique in diversified natural scene text for classification using genetic algorithm," *IEEE Access*, vol. 9, pp. 54 923–54 937, 2021.

[J26] G. M. Nunes, F. D. Oliveira, M. C. Farias, J. G. R. Gomes, A. Petraglia, J. Fernandez-Berni, R. Carmona-Galan, and A. Rodriguez-Vazquez, "Comparison between digital tone-mapping operators and a focal-plane pixel-parallel circuit," *Signal Processing: Image Communication*, vol. 88, p. 115937, 2020.

[J27] X. Min, G. Zhai, J. Zhou, M. C. Farias, and A. C. Bovik, "Study of subjective and objective quality assessment of audio-visual signals," *IEEE Transactions on Image Processing*, vol. 29, pp. 6054–6068, 2020.

[J28] H. B. Martinez, A. Hines, and M. C. Farias, "Unb-av: An audio-visual database for multimedia quality research," *IEEE Access*, vol. 8, pp. 56 641–56 649, 2020.

[J29] J. A. Lima, F. B. da Silva, R. von Borries, C. J. Miosso, and M. C. Farias, "Isotropic and anisotropic filtering norm-minimization: A generalization of the tv and tgv minimizations using nesta," *Signal Processing: Image Communication*, vol. 85, p. 115856, 2020.

[J30] W. Y. Akamine, P. G. Freitas, and M. C. Farias, "A framework for computationally efficient video quality assessment," *Signal Processing: Image Communication*, vol. 70, pp. 57–67, 2019.

[J31] P. G. Freitas, L. P. da Eira, S. S. Santos, and M. C. Farias, "Image quality assessment using bsif, clbp, lcp, and lpq operators," *Theoretical Computer Science*, 2019.

[J32] M. E. V. Melgar and M. C. Farias, "A (2, 2) xor-based visual cryptography scheme without pixel expansion," *Journal of Visual Communication and Image Representation*, p. 102592, 2019.

[J33] C. Sanchez-Ferreira, L. Coelho, H. Ayala, M. Farias, and C. Llanos, "Bio-inspired optimization algorithms for real underwater image restoration," *Signal Processing: Image Communication*, 2019.

[J34] A. R. Silva and M. C. Q. Farias, "Perceptual quality assessment of 3d videos with stereoscopic degradations," *Multimedia Tools and Applications*, Nov 2019.

[J35] P. Garcia Freitas, W. Y. Akamine, and M. C. Farias, "Referenceless image quality assessment by saliency, color-texture energy, and gradient boosting machines," *Journal of the Brazilian Computer Society*, vol. 24, no. 1, p. 9, 2018.

[J36] P. Garcia, W. Y. L. Akamine, and M. C. Q. Farias, "Using multiple spatio-temporal features to estimate video quality signal processing : Image communication using multiple spatio-temporal features to estimate video quality," *Signal Processing: Image Communication*, vol. 64, no. March, pp. 1–10, 2018.

[J37] H. A. Martinez and M. C. Farias, "Combining audio and video metrics to assess audio-visual quality," *Multimedia Tools and Applications*, vol. 77, no. 18, pp. 23 993–24 012, 2018.

[J38] H. B. Martinez and M. C. Q. Farias, "Using The Immersive Methodology to Assess The Quality of Videos Transmitted in UDP and TCP-Based Scenarios," *Electronic Imaging*, vol. 2018, no. 12, pp. 231–233, 2018.

[J39] A. F. Silva and M. C. Q. Farias, "Using perceptual strength estimates to predict the perceived annoyance of videos with combinations of spatial and temporal artifacts," *Journal of Electronic Imaging*, vol. 27, no. 4, p. 43018, 2018.

[J40] P. G. Freitas, W. Y. L. Akamine, and M. C. Q. Farias, "No-reference image quality assessment using orthogonal color planes patterns," *IEEE Transactions on Multimedia*, vol. 20, no. 12, pp. 3353–3360, dec 2018.

[J41] P. Garcia Freitas, L. da Eira, S. Santos, and M. Farias, "On the Application LBP Texture Descriptors and Its Variants for No-Reference Image Quality Assessment," *Journal of Imaging*, vol. 4, no. 10, p. 114, oct 2018.

[J42] P. G. Freitas, A. F. Silva, J. A. Redi, and M. C. Q. Farias, "Performance analysis of a video quality ruler methodology for subjective quality assessment," *Journal of Electronic Imaging*, vol. 27, no. 5, p. 53020, sep 2018.

[J43] P. G. Freitas and M. C. Q. Farias, "Fast video artistic transfer via motion compensation," *The International journal of Multimedia & Its Applications*, vol. 9, no. 2, pp. 15–20, 2017.

[J44] J. A. Lima, C. J. Miosso, and M. C. Farias, "Per-pixel mirror-based method for high-speed video acquisition," *Journal of Visual Communication and Image Representation*, vol. 47, pp. 23–35, 2017.

[J45] P. G. Freitas, W. Y. Akamine, and M. C. Farias, "Blind image quality assessment using multiscale local binary patterns," *Journal of Imaging Science and Technology*, vol. 60, no. 6, pp. 60 405–1, 2016.

[J46] P. G. Freitas, M. C. Farias, and A. P. Araujo, "Hiding color watermarks in halftone images using maximum-similarity binary patterns," *Signal Processing: Image Communication*, vol. 48, pp. 1–11, 2016.

[J47] ——, "Enhancing inverse halftoning via coupled dictionary training," *Signal Processing: Image Communication*, vol. 49, pp. 1–8, 2016.

[J48] P. Garcia Freitas, R. Rigoni, and M. C. Q. Farias, "Secure self-recovery watermarking scheme for error concealment and tampering detection," *Journal of the Brazilian Computer Society*, vol. 22, no. 1, p. 5, 2016.

[J49] M. Leszczuk, M. Hanusiak, M. C. Farias, E. Wyckens, and G. Heston, "Recent developments in visual quality monitoring by key performance indicators," *Multimedia Tools and Applications*, vol. 75, no. 17, pp. 10 745–10 767, 2016.

[J50] R. Rigoni, P. G. Freitas, and M. C. Q. Farias, "Detecting tampering in audio-visual content using QIM watermarking," *Information Sciences*, vol. 328, pp. 127–143, 2016.

[J51] C. Sanchez-Ferreira, J. Y. Mori, M. C. Farias, and C. H. Llanos, "A real-time stereo vision system for distance measurement and underwater image restoration," *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, vol. 38, no. 7, pp. 2039–2049, 2016.

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[C120] M. Farias, S. Mitra, and M. Carli, "Video quality objective metric using data hiding," in *IEEE Workshop on Multimedia Signal Processing (MMSP)*. IEEE, 2002, pp. 464–467.

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Books and Book Chapters

[B1] M. C. Farias, "Video quality metrics," in *Digital Video*. InTech, 2010.

[B2] M. M. Carvalho and M. Farias, "Digital terrestrial television multimedia broadcasting (dtmb)," in *Digital Television Systems*. Cambridge University Press, 2009.

[B3] M. Farias and M. M. Carvalho, "International system for digital television (isdtv)," in *Digital Television Systems*. Cambridge University Press, 2009.

[B4] M. C. Q. Farias *et al.*, *No-reference and reduced reference video quality metrics: new contributions*. Saarbracken, Germany: VDM Verlag, 2008.

JPEG Contributions

1.

1. UnB 360-degree: Open dataset of head movement traces of 360-degree video viewing, containing 6 different content categories and eighteen 360-degree videos. The dataset contains head movements (yaw, pitch, and roll angles) of 120 users while watching these videos on a BOBOVR X1 Head-Mounted Display (HMD).

2. UnB-AVQ 2018: Composed by data collected from three experiments, where groups of observers rated the audio-visual quality of a set of video sequences (with audio). All experiments used the immersive experimental methodology. In the first experiment, only the video component was degraded (video coding, packet loss, and frame freezing), in the second experiment only the audio component was degraded (background noise, clipping, echo, and chop). In the last experiment, both audio and video components were subject to the same types of degradation used for the previous two experiments. For all three experiments, subjects were asked to rate the overall audio-visual quality.

3. UnB-AVQ 2013: Contains data from three psychophysical experiments. For the first experiment, participants watched and rated only the video component of the sequences, containing compression degradations (H.264 at different bitrate values). For the second experiment, participants watched and rated only the audio component of the sequences, containing compression degradations (MPEG- 1 layer-3 codec, at different bitrate values). Finally, for the third experiment, participants watched and rated both the video and audio components, containing audio and video compression degradations.

4. UnB-3D: The database is a set of five CGI 3D scenes rendered using 3D models with various camera configurations.

5. VARIUM Database: Contains the data of three psychophysical experiments, which measured annoyance and detection characteristics of two spatial artifacts (blockiness and blurriness) and a temporal artifact (packetloss). The artifacts appear in isolation or in combination. The three experiments shared identical experimental methodology, interface, protocol, and viewing conditions.

Registered Software

- Farias, Mylene C.Q.; Melgar, Max E. Vizcarra, "Color Visual Cryptography System," Register Number: BR51201700052, date: 09/09/2016.
- Max E. Vizcarra; Farias, Mylene C.Q.; "HD2DC Barcode," Register Number: BR51201700052, date: 06/13/2017.

Invited Keynote Talks

1. "Quality of Experience of Immersive Media–New Challenges", WebMedia '23: Proceedings of the 29th Brazilian Symposium on Multimedia and the Web, October 2023, Ribeirao Preto, Brazil.
2. "Estimating the Quality of Experience of Immersive Contents", QoEVMA '22: 2nd Workshop on Quality of Experience in Visual Multimedia Applications, October 2022. Co-located with ACM Conference on Multimedia.

Invited Talks

1. "The Video Base Layer in TV 3.0", Workshop Futuro da TV Digital Interativa, co-located with Brasileiro de Sistemas Multimídia e Web (WebMedia), October 2023.
2. "Audio-Visual Quality Assessment Methodologies for Multimedia Applications," April 12, 2019, University of Texas at Austin, US.
3. "Influence of cross-modal IP-based degradations on the perceived audio-visual quality," VQEG Meeting - Mountain View, California, USA, November 15, 2018.
4. "Using Machine Learning to Estimate Audio-Visual Quality," Self-Organizing Conference on Machine Learning (SOCML 2018), December 1, 2018, Toronto, Canada.
5. "Blind Quality Estimation Using Local Binary Patterns," 22 November, 2017, Federal University of Rio de Janeiro.
6. "Blind Image Quality Assessment Using Local Binary Patterns," 7 February, 2017, University of Texas at Dallas, US.
7. "Designing Algorithms to Estimate Image and Video Quality," 19 February, 2015, Unversidade Tecnológica Federal do Paraná, Brazil.
8. "Designing Algorithms to Estimate Image and Video Quality," 25 October, 2013, State University of Campinas (Unicamp), Brazil.
9. "Designing Objective Visual Quality Metrics," 21st February 2012, TU Delft, The Netherlands.

Supervised Students

Current Ph.D. Students

1. Juliana Mantebea Danso, Computer Science, Texas State University.
2. Polina Orhunova, Computer Science, Texas State University.
3. Swarna Chakraborty, Computer Science, Texas State University.
4. Md Mustafizur Rahman, Computer Science, Texas State University.
5. Mayesha Maliha R Mithila, Computer Science, Texas State University.
6. Myllena de Almeida Prado, Computer Science, Texas State University.
7. Alessandro R. Silva, Computer Science, University of Brasilia;
8. Dario Daniel Ribeiro Moraes, Electrical Engineering, University of Brasilia;
9. André Henrique Macedo da Costa, Electrical Engineering, University of Brasilia.

Current M.Sc. Students

1. Wenhan Tao, Texas State University.
2. Charly Pravallika Talatoti, Texas State University.
3. Muaaz Alam, Texas State University.

Ph.D. Graduates

1. Lucas dos Santos Althoff, "Impact of Alignment Edits on the User Experience of 360-degree Videos", December 2023, Ph.D. Dissertation (Computer Science) - University of Brasília.
2. Muhammad Irshad, 2022, "Quality Assessment of Enhanced Underwater Images with Convolutional Neural Networks", Ph.D. Dissertation (Electrical Engineering) - University of Brasília.
3. Sana Alamgeer, "Deep Learning Based Objective Quality Assessment of Multidimensional Visual Content," 2022, Ph.D. Dissertation (Electrical Engineering) - University of Brasília.
4. Rafael Diniz, "3D Point-Cloud Quality Assessment Using Color and Geometry Texture Descriptors," July 2021, Ph.D. Dissertation (Computer Science) - University of Brasília.
5. Kerlla de Souza Luz, "Processo de Desenvolvimento de Novos Produtos e o Modelo de Referência Mecatrônico: Uma experiência didática na escola de empreendedores do CDT-UnB." 2019, Ph.D. Dissertation (Electrical Engineering) - University of Brasília.
6. Jonathan Alis Salgado Lima, "The application of analysis filters in compressed sensing algorithms for magnetic resonance imaging reconstruction," August 2019, Ph.D. Dissertation (Computer Science) - University of Brasília.
7. Helard Becerra Martinez, "A Three Layer System for Audio-visual Quality Assessment," February 2019, Ph.D. Dissertation (Computer Science) - University of Brasília.
8. Max E. Vizcarra Melgar, "Design of Data Validation Solutions using High Density 2D Colored Codes AMD a (2,2) XOR-based Color Interference Visual Cryptography Scheme," March 2018, Ph.D. Dissertation (Electrical Engineering) - University of Brasília.
9. Pedro Garcia Freitas, "Using Texture Measures for Visual Quality Assessment," September 2017, Ph.D. Dissertation (Computer Science) - University of Brasília.
10. Alexandre Fieno da Silva, "No-reference Video Quality Assessment Model Based on Artifact Metrics for Digital Transmission Applications," March 2017, Ph.D. Dissertation (Computer Science) - University of Brasília.

M.Sc. Graduates

1. Ricardo Bauchspiess, 'A Degradation-Robust Deep Learning Framework for MRI Computer-Aided Brain Tumor Diagnosis', December 2024, M.Sc. in Electrical Engineering, University of Brasilia;
2. Parisa Tabassum, 'Studying the Impact of Imaging Artifacts on CNN-Based Brain Cancer Detection, April 2024, M.Sc. in Computer Science, Texas State University.
3. Igor Bispo, 'Deforestation Detection in SAR Images Using Deep Neural Networks,' June 2024, M.Sc. Thesis (Electrical Engineering), PPGEE, Universidade de Brasilia.
4. Aline Alves Soares Thomaz, 'Reconstrução de Imagens Utilizando Aprendizado Profundo e Técnicas de Compressive Sensing," 2022, M.Sc. Thesis (Electrical Engineering), PPGEE, Universidade de Brasilia.
5. Paulo Henrique de Castro Oliveira, "Detecção de Tumores Cerebrais Utilizando Redes Neurais Convolucionais Guiadas por Mapas de Saliência," 2022, M.Sc. Thesis (Electrical Engineering), PPGEE, Universidade de Brasilia.
6. André Henrique Macedo da Costa, "Quality Assessment of Videos with Temporal Degradations (In Portuguese)", 2022, M.Sc. Thesis (Electrical Engineering), PPGEE, Universidade de Brasilia

7. João Marcello Schubnell Abreu de Rezende Lima. "Estimating Image Aesthetic Value using a Content-Based Convolutional Neural Network Architecture." 2019, M.Sc. Thesis (Electrical Engineering) - University of Brasília.

8. Dario Daniel Ribeiro Moraes, "A Hybrid No-Reference Video Quality Metric for Digital Transmission Applications," 2017, M.Sc. Thesis (Electrical Engineering) - University of Brasília.

9. Welington Yorihiko Lima Akamine, "On the performance of Video Quality Assessment Methods for Different Spatial and Temporal Resolutions", 2017, M.Sc. Thesis (Electrical Engineering) - University of Brasília.

10. Helard Becerra Martinez, "Design of a Quality Metric for Audio-Visual Signals," 2014, Dissertação (Mestrado em Informática) - University of Brasília.

11. Tainá Borges Andrade, "No-Reference Image Quality Metrics Métricas that Incorporate Visual Attention Models," 2014, M.Sc. Thesis (Electrical Engineering) - University of Brasília.

12. Jonathan Alis Lima, "Per-pixel mirror-based measuring: A new method for high-speed video acquisition," 2014, M.Sc. Thesis (Computer Science) - University of Brasília.

13. Ronaldo Rigoni, "Detection of Spatial and Temporal Tampering Attacks using a QIM Watermarking Methodology," 2013, M.Sc. Thesis (Computer Science) - University of Brasília.

14. Pedro Garcia Freitas, "A Parallel Framework for Super-Resolution Algorithms," 2013, M.Sc. Thesis (Computer Science) - University of Brasília.

15. Carlos Danilo Miranda Regis, "Spatial Transcoding of Digital Videos in Mobile Applications," 2009, M.Sc. Thesis (Electrical Engineering) - Universidade Federal de Campina Grande.

Undergraduate Students

1. Túlio Rezende Trefzger de Mello. Classification and Restoration of Degraded Magnetic Resonance Images for Brain Tumor Analysis," 2022, Final Project, Electrical Engineering, Universidade de Brasilia.

2. João Paulo Pinheiro Melo, "Brain Tumor Segmentation and Visualization in Virtual Reality, ", 2022, Final Project, Electrical Engineering, Universidade de Brasilia.

3. Israel de Araujo Nascimento, "On the inclusion of video attention for quality of experience evaluation in virtual reality environments," 2022, Final Project, Electrical Engineering, Universidade de Brasilia.

4. Guilherme Andrey Medeiros Ribeiro, "Using Transformers to blindly estimate audio-visual quality for video contents," 2022, Final Project, Electrical Engineering, Universidade de Brasilia.

5. Iago Cossentino de Andrade, "Using Machine Learning Algorithms to Detect Osteoporosis Using Odontological X-Ray Images, " Final Project, Mechatronics Engineering, Universidade de Brasilia.

6. Myllena de Almeida Prado, "360RAT: A Tool for Annotating Regions of Interest in 360-degree Videos, " Final Project, Mechatronics Engineering, Universidade de Brasilia.

7. Vitor Martin Bordini, "Segmentation of Brain Tumors in Magnetic Resonance Imaging Scans Using Convolutional Neural Networks," 2022, Final Project, Electrical Engineering, Universidade de Brasilia.

8. Raffael Luna Cardoso (Electrical Engineering), "Blind Video Quality Estimation Using Optical Flow Features," 2018.

9. Andre Henrique Macedo da Costa (Electrical Engineering), "Using Deep Convolutional Neural Networks to Identify Tatoo Artists," 2018.

10. Fernanda Garcia Vilela (Electrical Engineering), "A Machine Learning Typographic System for Blind People," 2017.

11. Brunno de Albuquerque Castro (Electrical Engineering), "Using Watermarking to Detect Tampering in Audio-Visual Signals," 2016.

12. Marcel Magalhães (Computer Engineering), "Using Visual Attention to Analyze User Behavior in Social Networks," 2015.

13. Welington Yorihiko Lima Akamine (Computer Engineering), "Using Bottom-Up Visual Attention Models to Estimate Visual Quality," 2014.

14. Rodrigo Cerqueira Gonzalez Pena (Electrical Engineering), "Design of Video Quality Metrics with Top-Down Visual Attention Features," 2014.

15. Matheus Lima da Rocha Pitta, "Using Watermarking and Halftoning for Error Concealment," 2012.

Courses Taught

1. Texas State University

   - CS 7324 HCI Paradigms for Animation, Visualization, and Virtual/Augmented Reality: Fall 2023.
   - CS 3339 Computer Architecture: Spring 2023, Spring 2024, Fall 2024, Spring 2025.
   - CS 4372 Introduction to Digital Multimedia: Spring 2024.

2. University of Brasília (semesters)

   - Digital Systems: 2013.1, 2013.2, 2014.1, 2014.2, 2015.2, 2016.1, 2016.2, 2017.1, 2017.2, 2018.1.
   - Digital Systems Laboratory: 2019.2, 2020.1
   - Image Processing: 2014.1, 2014.2, 2015.1, 2016.1., 2018.1, 2019.2, 2020.1, 2021.1, 2021.2
   - Digital Processors Architecture – Laboratory: 2012.2
   - Signal and Systems: 2012.1, 2011.2, 2020.2, 2021.1, 2021.2
   - Multimedia Signal Processing: 2011.1, 2012.1
   - Data Transmission: 2009.2, 2010.1, 2010.2.
   - Digital Processors Architecture: 2009.2

3. Federal University of São Paulo (semesters)

   - Basic Computer Programming: 2008.1
   - Computers and Society: 2008.1
   - Computer Architecture and Organization I: 2008.2
   - Computer Architecture and Organization II: 2009.1

4. Federal University of Campina Grande (semesters)

   - Digital Signal Processing: 2006.2, 2007.1

5. University of California Santa Barbara (as Teaching Assistant)

   - Stochastic Processes – Teaching Assistant
   - Physics 2B e 2C – Reader

Committees

Ph.D. Committees

1. Robert Spang, "Individualized Quality of Experience Estimation in AudiovisualCommunication" December 2023, Fakultät IV Elektrotechnikund Informatik, Technische Universitat Berlin, Germany.

2. Alexander Katrompas, "Recurrence and temporal attention synergy for optimal time-series modelling and interpretability, " October 2023, Computer Science, Texas State University.

3. Germano de Souza Fonseca, "Design of multispectral filters in the shortwavelength infrared band based on the ecostress library, " July 2023, Electrical Engineering, Federal University of Rio de Janeiro.

4. Maurice Quach, "Deep learning-based Point Cloud Compression and Quality Assessment", 2022, Université Paris-Saclay, CNRS, Centrale Supélec, Paris, France.

5. Yu Fan, "Quality assessment of stereoscopic 3D content based on binocular perception," 2019, Norwegian University of Science and Technology (NTNU), Norway.

6. Michel Melo da Silva, "Semantic Hyperlapse: A Recorder-Aware and Multi-Importance Approach for First Person Videos," 2017, Universidade Federal de Minas Gerais.

7. Rafael Galvão Mesquita, "Reconhecimento de Instâncias Guiado por Algoritmos de Atenção Visual," 2017, Universidade Federal de Pernambuco.

8. Camilo Sanchez Ferreira, "Restauração de Imagens Subaquáticas Usando Algoritmos de Enxames e Métricas Especificas," 2016, Universidade de Brasilia.

9. Emerson Lopes Machado, " Redução de custo computacional em classificações baseadas em transformadas aprendidas," 2015, University of Brasília.

10. Gerardo Antonio Idrobo Pizo, "Projeto de um Descritor para o Alinhamento de Imagens de Profundidade de Superfícies com Aplicação em Visão Robótica," 2014, Universidade de Brasilia.

11. Vinicius de Carvalho Rispoli, "Simulações computacionais do escoamento cardiovascular guiadas por ressonância magnética," 2014, University of Brasília.

12. Fabio R. Piva, "Abordando fatores humanos no projeto de soluções criptográficas: dois estudos de caso em validação de itens e autenticação," 2014, Universidade Estadual de Campinas.

13. Carlos Danilo Miranda Regis, "Metricas de Avaliação Objetiva para Vídeos com Duas e Três Dimensões," 2013, Universidade Federal de Campina Grande.

14. Marcio Lucas Graciano Junior, "Metodologia para medidas objetivas de qualidade de vídeo em sistemas de difusão de conteúdos audiovisuais," 2013, University of Brasília.

15. Tiago Alves da Fonseca, "Codificação de Vídeo Escalonável em Complexidade e em Energia," 2012, University of Brasília.

M.Sc. Committees

1. Awatif Yasmin, "Towards Improving the Real Time Performance of Smartfall System", June 2024, Computer Science, Texas State University.

2. Lorena Batista Sandre, "Radiomic signature based on tomography images cone beamcomputerization in the assessment of osteoporosis." December 2023, Odontology Department, University of Brazil.

3. André Luis Souto Ferreira, "On Predictive RAHT for Dynamic Point Cloud Compression", May 2021, Electrical Engineering, University of Brasília.

4. Yilliet Garcia Garcia, "Método para Reconstrução de Imagens de Tomografia por Emissão de Positrons com Base em Compressive Sensing e Informação a Priori", 2021, Biomedical Engineering Program, University of Brasília.

5. André Luiz Dutra Costa, "Reversão anaglífica - um novo método baseado em cálculo de correspondências robusto a diferenças radiométricas.", ICMC-USP, August 2021.

6. Tomás Malheiros Borges, "Fractional Super-Resolution of Voxelized Point Clouds," January 2021, Electrical Engineering, University of Brasília.

7. Oscar Eduardo Anacona Mosquera, "Implementação de Algoritmo Richardson-Lucy em Arquiteturas Reconfiguráveis Aplicado ao Problema de Borramento de Imagens," 2015 - University of Brasília.

8. Eduardo Romani, "Avaliação de Qualidade de Vídeo Utilizando Modelo de Atenção Visual Baseado em Saliência," 2015, Universidade Tecnológica Federal do Paraná.

9. Rodrigo Mulinari, "Esquemas Adaptativos para Distribuição de Vídeo na Internet" 2009, University of Brasília.

10. Gilson Jerônimo da Silva Júnior, "Banco de Filtros e Wavelets sobre Corpos Finitos," 2008, Universidade Federal de Pernambuco.

11. Roberto Nery da Fonseca, "Algoritmos para avaliação da qualidade de vídeo em sistemas de televisão digital," 2008, Universidade de São Paulo.

12. Jean Felipe Fonseca de Oliveira, “Modelo de Simulação da Transmissão de Vídeo Digital para o Canal Móvel do Sistema Brasileiro de Televisão Digital,” 2007, Universidade Federal de Campina Grande.