

**Warning:** [2024-10-28 10:20] this document is a print-out of the Ciência-iul web portal and was automatically generated at the labeled date. The document has a mere informational purpose and represents the information contained on Ciência-IUL at that date.

## Catarina Brites

### Professora Auxiliar

Department of Information Science and Technology (ISTA)

### Contacts

<b>E-mail</b>	Catarina.Brites@iscte-iul.pt
<b>Office</b>	D6.16

### Curriculum

Catarina Brites received the E.E., M.Sc., and Ph.D. degrees in Electrical and Computer Engineering from the Instituto Superior Técnico (IST), Universidade de Lisboa, Lisbon, Portugal, in 2003, 2005, and 2011, respectively. She is currently an Assistant Professor with the Department of Information Science and Technology at ISCTE - Instituto Universitário de Lisboa. Previously, she has been an Invited Assistant Professor with the Electrical and Computer Engineering Department at Instituto Superior Técnico. In the last years, she has also been responsible for co-supervising several M.Sc. theses in Electrical and Computer Engineering at Instituto Superior Técnico in the areas of image/video coding, deep learning based image coding, coding and processing of light fields and coding and quality assessment of point clouds. Several of the co-supervised M.Sc. theses have resulted in publications in international peer-reviewed journals (mostly from IEEE) and in renowned international conferences (also peer-reviewed) in the area of multimedia signal processing.

Regarding her scientific activity, she has been developing research activity in the Multimedia Signal Processing Group (MSP-Lx) of Instituto de Telecomunicações. Her current research interests include 2D/3D visual data coding, event data coding, plenoptic imaging (light fields and point clouds) processing and coding, machine learning, visual quality assessment, and multimedia systems. Up to now, she has authored more than 70 international scientific journals and conference research papers and 1 book chapter (bringing together contributions from international experts in the distributed video coding field). According to Google Scholar, her scientific production has more than 3890 citations and her h-index of 30. Furthermore, over the last years, she is or has been actively involved in several European and National R&D projects in the fields of 2D/3D video coding and analysis, plenoptic image coding and quality assessment, deep learning based image coding and event-based vision data coding, being currently Co-Principal Investigator of one National project. In parallel to this activity, she has also had intense collaboration with international journal and conferences. She is or has been an Associate Editor of IEEE OPEN JOURNAL OF SIGNAL PROCESSING and IEEE TRANSACTIONS ON IMAGE PROCESSING. She is or has been a Member of the Organizing Committee and the Technical Program Committee of several widely known international conferences in the multimedia signal processing field (IEEE, EURASIP, Springer). She is also an active Reviewer for several international scientific journals (IEEE, Elsevier, EURASIP, IET and SPIE) and international conferences (most of them from IEEE). Additionally, she is a Member of the Technical Commission CT-120 - Image, Audio

and Multimedia Information Coding and has been a Member of the Young Scientists Seminar of the Lisbon Science Academy.

## Research Interests

Image/video processing and coding

Event-based imaging

Plenoptic imaging (light fields, point clouds)

## Academic Qualifications

University/Institution	Type	Degree	Period
Instituto Superior Técnico - UTL	PhD	Engenharia Electrotécnica e de Computadores	2011
Instituto Superior Técnico - UTL	M.Sc.	Engenharia Electrotécnica e de Computadores	2005
Instituto Superior Técnico - UTL	Licenciate	Engenharia Electrotécnica e de Computadores	2003

## Teaching Activities

Teaching Year	Sem.	Course Name	Degree(s)	Coord.
2024/2025	2º	Operating Systems	Bachelor Degree in Computer Science and Business Management (PL); Bachelor Degree in Computer Engineering (PL); Bachelor Degree in Computer Engineering; Bachelor Degree in Telecommunications and Computer Engineering (PL); Bachelor Degree in Computer Science and Business Management; Bachelor Degree in Telecommunications and Computer Engineering;	No
2024/2025	1º	Fundamentals of Computer Architecture	Bachelor Degree in Computer Science and Business Management (PL); Bachelor Degree in Computer Engineering (PL); Bachelor Degree in Computer Engineering; Bachelor Degree in Telecommunications and Computer Engineering (PL); Bachelor Degree in Computer Science and Business Management; Bachelor Degree in Telecommunications and Computer Engineering;	No

## Supervisions

- **Ph.D. Thesis**  
- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Ahmadreza Sezavar	Efficient Compression and Analysis Techniques for Event-Based Streams	English	Developing	Instituto Superior Técnico

## • M.Sc. Dissertations

### - Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
1	Francisco Vieira Ramos Ferreira	Compressed Domain Face Recognition Assessment	English	Instituto Superior Técnico - Universidade de Lisboa	2023
2	Marta Filipa De Pinto Marques	How Fake is my Image? Evaluation of Generative Adversarial Networks	English	Instituto Superior Técnico - Universidade de Lisboa	2021
3	José Maria Abecasis Teixeira	Extracting distinctive features from light-field images	English	Instituto Superior Técnico - Universidade de Lisboa	2017
4	Guilherme Filipe Gonçalves Luz	Omnidirectional Video: Adaptive Coding based on Saliency	English	Instituto Superior Técnico - Universidade de Lisboa	2017
5	João Pedro de Carvalho Barreira Garrote	Light Fields Imaging Coding	English	Instituto Superior Técnico - Universidade de Lisboa	2017
6	Miguel Branco Roque Nazaré Ferreira	Dynamic 3D Point Cloud Compression	English	Instituto Superior Técnico - Universidade de Lisboa	2017
7	Paulo Jorge Robert de Oliveira Rente	Graph-based Point Cloud Compression	English	Instituto Superior Técnico - Universidade de Lisboa	2017
8	Luís Miguel Domingos Nunes	Objective Quality Assessment of 3D Synthesized Views	English	Instituto Superior Técnico - Universidade de Lisboa	2017
9	André Alexandre Rodrigues Oliveira	Light Field based 360° Panoramas	English	Instituto Superior Técnico - Universidade de Lisboa	2016
10	André Seixas Dias	Perceptual Error Protection Using Distributed Video Coding Principles	English	Instituto Superior Técnico - Universidade de Lisboa	2013

## Total Citations

Web of Science®	732
Scopus	887

## Publications

### • Scientific Journals

#### - Scientific journal paper

1	<p>Javaheri, A., Brites, C., Pereira, F. &amp; Ascenso, João (2022). Joint Geometry and Color Projection- Based Point Cloud Quality Metric. IEEE Access. 10, 90481-90497</p> <ul style="list-style-type: none"><li>- Times Cited Web of Science®: 9</li><li>- Times Cited Scopus: 12</li><li>- Times Cited Google Scholar: 21</li></ul>
2	<p>Javaheri, A., Brites, C., Pereira, F. &amp; Ascenso, João (2021). Point Cloud Rendering after Coding: Impacts on Subjective and Objective Quality. IEEE Transactions on Multimedia. 23, 4049 -4064</p> <ul style="list-style-type: none"><li>- Times Cited Web of Science®: 38</li><li>- Times Cited Scopus: 47</li><li>- Times Cited Google Scholar: 98</li></ul>
3	<p>Brites, C., Ascenso, João &amp; Pereira, Fernando (2021). Lenslet Light Field Image Coding: Classifying, Reviewing and Evaluating. IEEE Transactions on Circuits and Systems for Video Technology. 31 (1), 339-354</p> <ul style="list-style-type: none"><li>- Times Cited Web of Science®: 17</li><li>- Times Cited Scopus: 20</li><li>- Times Cited Google Scholar: 28</li></ul>
4	<p>Javaheri, A., Brites, C., Pereira, F. &amp; Ascenso, João (2020). Mahalanobis based Point to Distribution Metric for Point Cloud Geometry Quality Evaluation. IEEE Signal Processing Letters. 27, 1350-1354</p> <ul style="list-style-type: none"><li>- Times Cited Web of Science®: 45</li><li>- Times Cited Scopus: 52</li><li>- Times Cited Google Scholar: 62</li></ul>
5	<p>Pereira, Fernando, Dricot, Antoine, Ascenso, João &amp; Brites, C. (2020). Point cloud coding: A privileged view driven by a classification taxonomy. Signal Processing: Image Communication. 85, 115862</p> <ul style="list-style-type: none"><li>- Times Cited Web of Science®: 15</li><li>- Times Cited Scopus: 16</li><li>- Times Cited Google Scholar: 24</li></ul>
6	<p>Rente, Paulo de Oliveira, Brites, C., Ascenso, João &amp; Pereira, Fernando (2019). Graph-Based Static 3D Point Clouds Geometry Coding. IEEE Transactions on Multimedia. 21 (2), 284-299</p> <ul style="list-style-type: none"><li>- Times Cited Web of Science®: 86</li><li>- Times Cited Scopus: 90</li><li>- Times Cited Google Scholar: 118</li></ul>

7	<p>Peixeiro, José Pedro, Brites, C., Ascenso, João &amp; Pereira, Fernando (2018). Holographic Data Coding: Benchmarking and Extending HEVC with Adapted Transforms. <i>IEEE Transactions on Multimedia</i>. 20 (2), 282-297</p> <ul style="list-style-type: none"> <li>- Times Cited Web of Science®: 38</li> <li>- Times Cited Scopus: 43</li> <li>- Times Cited Google Scholar: 62</li> </ul>
8	<p>Brites, C. &amp; Pereira, Fernando (2015). Multiview side information creation for efficient Wyner-Ziv video coding: Classifying and reviewing. <i>Signal Processing: Image Communication</i>. 30 (1), 1-36</p> <ul style="list-style-type: none"> <li>- Times Cited Web of Science®: 5</li> <li>- Times Cited Scopus: 2</li> <li>- Times Cited Google Scholar: 5</li> </ul>
9	<p>Brites, C. &amp; Pereira, Fernando (2015). Distributed video coding: Assessing the HEVC upgrade. <i>Signal Processing: Image Communication</i>. 32 (3), 81-105</p> <ul style="list-style-type: none"> <li>- Times Cited Web of Science®: 12</li> <li>- Times Cited Scopus: 10</li> <li>- Times Cited Google Scholar: 14</li> </ul>
10	<p>Dias, André Seixas, Brites, C., Ascenso, João &amp; Pereira, Fernando (2015). SIFT-Based Homographies for Efficient Multiview Distributed Visual Sensing. <i>IEEE Sensors Journal, Special Issue on Distributed Smart Sensing for Mobile Vision</i>. 15 (5), 2643-2656</p> <ul style="list-style-type: none"> <li>- Times Cited Web of Science®: 5</li> <li>- Times Cited Scopus: 6</li> <li>- Times Cited Google Scholar: 9</li> </ul>
11	<p>Salmistraro, Matteo, Ascenso, João, Brites, C. &amp; Forchhammer, Søren (2014). A robust fusion method for multiview distributed video coding. <i>Eurasip Journal on Advances in Signal Processing</i>. 2014 (1), 1-16</p> <ul style="list-style-type: none"> <li>- Times Cited Web of Science®: 5</li> <li>- Times Cited Scopus: 3</li> <li>- Times Cited Google Scholar: 9</li> </ul>
12	<p>Dias, André Seixas, Brites, C., Ascenso, João &amp; Pereira, Fernando (2014). Perceptually driven video error protection using a distributed source coding approach. <i>Signal Processing: Image Communication</i>. 29 (1), 1-22</p> <ul style="list-style-type: none"> <li>- Times Cited Google Scholar: 1</li> </ul>
13	<p>Brites, C. &amp; Pereira, Fernando (2014). Epipolar geometry-based side information creation for multiview wyner-ziv video coding. <i>IEEE Transactions on Circuits and Systems for Video Technology</i>. 24 (10), 1771-1786</p> <ul style="list-style-type: none"> <li>- Times Cited Web of Science®: 4</li> <li>- Times Cited Scopus: 3</li> <li>- Times Cited Google Scholar: 5</li> </ul>
14	<p>Brites, C., Ascenso, João &amp; Pereira, Fernando (2013). Side information creation for efficient Wyner-Ziv video coding: Classifying and reviewing. <i>Signal Processing: Image Communication</i>. 28 (7), 689-726</p> <ul style="list-style-type: none"> <li>- Times Cited Web of Science®: 15</li> <li>- Times Cited Scopus: 15</li> <li>- Times Cited Google Scholar: 25</li> </ul>
15	<p>Brites, C. &amp; Pereira, Fernando (2011). An efficient encoder rate control solution for transform domain wyner-ziv video coding. <i>IEEE Transactions on Circuits and Systems for Video Technology</i>. 21 (9), 1278-1292</p> <ul style="list-style-type: none"> <li>- Times Cited Web of Science®: 28</li> <li>- Times Cited Scopus: 29</li> <li>- Times Cited Google Scholar: 42</li> </ul>

16	<p>Martins, Ricardo, Brites, C., Ascenso, João &amp; Pereira, Fernando (2010). Statistical motion learning for improved transform domain wyner-ziv video coding. <i>IET Image Processing</i>, 4 (1), 28-41</p> <p>- Times Cited Web of Science®: 29</p> <p>- Times Cited Scopus: 33</p> <p>- Times Cited Google Scholar: 45</p>
17	<p>Ascenso, João, Brites, C. &amp; Pereira, Fernando (2010). A flexible side information generation framework for distributed video coding. <i>Multimedia Tools and Applications, Special Issue on Distributed Video Coding</i>, 48 (3), 381-409</p> <p>- Times Cited Web of Science®: 28</p> <p>- Times Cited Scopus: 28</p> <p>- Times Cited Google Scholar: 40</p>
18	<p>Martins, Ricardo, Brites, C., Ascenso, João (361C-6DEB-6354) &amp; Pereira, Fernando (2009). Adaptive deblocking filter for transform domain Wyner-Ziv video coding. <i>IET Image Processing, Special Issue on Distributed Video Coding</i>, 3 (6), 315-328</p> <p>- Times Cited Web of Science®: 8</p> <p>- Times Cited Scopus: 12</p> <p>- Times Cited Google Scholar: 17</p>
19	<p>Martins, Ricardo, Brites, C., Ascenso, João &amp; Pereira, Fernando (2009). Refining side information for improved transform domain wyner-ziv video coding. <i>IEEE Transactions on Circuits and Systems for Video Technology</i>, 19 (9), 1327-1341</p> <p>- Times Cited Web of Science®: 73</p> <p>- Times Cited Scopus: 94</p> <p>- Times Cited Google Scholar: 136</p>
20	<p>Brites, C., Ascenso, João, Pedro, José Quintas &amp; Pereira, Fernando (2008). Evaluating a feedback channel based transform domain Wyner-Ziv video codec. <i>Signal Processing: Image Communication</i>, 23 (4), 269-297</p> <p>- Times Cited Web of Science®: 71</p> <p>- Times Cited Scopus: 88</p> <p>- Times Cited Google Scholar: 121</p>
21	<p>Brites, C. &amp; Pereira, Fernando (2008). Correlation noise modeling for efficient pixel and transform domain Wyner-Ziv video coding. <i>IEEE Transactions on Circuits and Systems for Video Technology</i>, 18 (9), 1177-1190</p> <p>- Times Cited Web of Science®: 173</p> <p>- Times Cited Scopus: 219</p> <p>- Times Cited Google Scholar: 327</p>

## • Books and Book Chapters

### - Book chapter

1	<p>Pereira, Fernando, Brites, C. &amp; Ascenso, João (2009). Distributed Video Coding: Basics, Codecs, and Performance. In Pier Luigi Dragotti, Michael Gastpar (Ed.), <i>Distributed Source Coding: Theory, Algorithms and Applications</i>. (pp. 189-245): Elsevier.</p> <p>- Times Cited Scopus: 6</p> <p>- Times Cited Google Scholar: 10</p>
2	<p>Pereira, Fernando, Ascenso, João, Brites, C., Fonseca, Pedro, Pinho, Pedro &amp; Baltazar, Joel (2007). Evolution and Challenges in Multimedia Representation Technologies. In <i>A Portrait of State-of-the-Art Research at the Technical University of Lisbon</i>. (pp. 275-294): Springer Netherlands.</p> <p>- Times Cited Google Scholar: 1</p>

3	<p>Natário, Luís, Brites, C., Ascenso, João &amp; Pereira, Fernando (2006). Extrapolating Side Information for Low-Delay Pixel-Domain Distributed Video Coding. In Lecture Notes in Computer Science. (pp. 16-21): Springer Berlin Heidelberg.</p> <p>- Times Cited Scopus: 14</p> <p>- Times Cited Google Scholar: 117</p>
---	---

## • Conferences/Workshops and Talks

### - Publication in conference proceedings

1	<p>Diogo Lopes, Ascenso, João, Brites, C. &amp; Pereira, F. (2021). Image Coding with Neural Network-Based Colorization. In ICASSP 2021 - 2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). (pp. 4225-4229). Toronto, ON, Canada: IEEE.</p> <p>- Times Cited Web of Science®: 1</p> <p>- Times Cited Scopus: 2</p> <p>- Times Cited Google Scholar: 2</p>
2	<p>Javaheri, A., Brites, C., Pereira, F. &amp; Ascenso, João (2021). A Point-to-Distribution Joint Geometry and Color Metric for Point Cloud Quality Assessment. In 2021 IEEE 23rd International Workshop on Multimedia Signal Processing (MMSp). Tampere: IEEE.</p> <p>- Times Cited Web of Science®: 7</p> <p>- Times Cited Scopus: 17</p> <p>- Times Cited Google Scholar: 29</p>
3	<p>Javaheri, A., Brites, C., Pereira, F. &amp; Ascenso, João (2020). Improving Psnr-Based Quality Metrics Performance For Point Cloud Geometry. In 2020 IEEE International Conference on Image Processing (ICIP). (pp. 3438-3442). Abu Dhabi, United Arab Emirates: IEEE.</p> <p>- Times Cited Web of Science®: 20</p> <p>- Times Cited Scopus: 26</p> <p>- Times Cited Google Scholar: 34</p>

## • Other Publications

### - Master's Dissertation

1	<p>Brites, C. (2005). Advances on Distributed Video Coding.</p> <p>- Times Cited Google Scholar: 27</p>
---	---

### - Doctoral Thesis

1	<p>Brites, C. (2011). Exploiting Correlation Noise Modeling in Wyner-Ziv Video Coding.</p> <p>- Times Cited Google Scholar: 10</p>
---	--

## Professional Associations

CT 120 – Codificação de Imagem, Áudio e Informação Multimédia (Since 2017)

SJC – Academia das Ciências de Lisboa (2017 - 2021)

EURASIP (2015 - 2019)

IEEE - Institute of Electrical and Electronics Engineers (Since 2011)

## Organization/Coordination of Events

Type of Organization/Coordination	Event Title	Organizer	Year
Member of scientific event committee	International Conference on Advanced Concepts for Intelligent Vision Systems (ACIVS)		2023
Member of scientific event's organizing committee	2022 European Workshop on Visual Information Processing (EUVIP)		2022
Member of scientific event committee	Visual Communications and Image Processing (VCIP)		2020
Member of scientific event committee	International Conference on Advanced Concepts for Intelligent Vision Systems (ACIVS)		2020
Member of scientific event's organizing committee	82nd JPEG Meeting	JPEG	2019
Member of scientific event committee	National Conference on Telecommunications (ConfTele)		2019
Member of scientific event committee	Visual Communications and Image Processing (VCIP)		2018
Member of scientific event committee	International Conference on Signal Image Technology & Internet Based Systems (SITIS)		2018 - 2019
Member of scientific event's organizing committee	2016 International Workshop on Quality of Multimedia Experience (QoMEX)		2016
Member of scientific event committee	International Conference on Advanced Concepts for Intelligent Vision Systems (ACIVS)		2015 - 2018
Member of scientific event committee	International Conference on Signal Image Technology & Internet Based Systems (SITIS)		2015 - 2016
Member of scientific event committee	IEEE International Conference on Image Processing (ICIP)		2014
Member of scientific event's organizing committee	2014 European Signal Processing Conference (EUSIPCO)		2014
Member of scientific event committee	IEEE International Conference on Multimedia & Expo (ICME)		2012 - 2014
Member of scientific event's organizing committee	2007 Picture Coding Symposium (PCS)		2007
Member of scientific event committee	IEEE International Conference on Multimedia & Expo (ICME)		2007 - 2009

## Scientific Editing/Reviewing Activities

Type of Activity	Journal Title	ISSN/Quartile	Period	Language
------------------	---------------	---------------	--------	----------



Member of scientific journal editing staff	IEEE Open Journal of Signal Processing	2644-1322 / Q1	2024 - 2026	English
Member of scientific journal editing staff	IEEE Transactions on Image Processing	1941-0042	2015 - 2019	English