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FábioDias

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Interests

Signal processing
Visual analytics
Machine learning

Web

Google Scholar
LinkedIn

Languages

English ★★★★★
IELTS 8.5/9 (2016)
TOEIC 990/990 (2011)
French ★★★☆☆

Experience

09/17- **PostDoctoral Fellow - Urban Genome Project** University of Toronto, Toronto, CA
An UofT - Connaught Global Challenge project, with researchers from several areas, aiming to improve the understanding of the urban environment in its many facets. My role is to develop new visual analytics to enable the identification and dissemination of insights from urban data, by professionals and the general public.
Publications: 1 conference (submitted), 1 book chapter (submitted).

07/16-06/17 **Research Scholar** NYU Tandon School of Engineering, NY, US
Visual analytics for network urban data.
- Project management, team coordination, and mentoring,
- Development of visual analytics systems for urban data,
- Exploration of deep neural networks for human pose recovery in sports,
- Creation of new data clustering methods.

Publications: 2 journals, 2 conferences.

01/15-08/17 **Research Scholar** ICMC-University of Sao Paulo, Sao Carlos, BR
Visual analytics for network data.
- Project management, team coordination, and mentoring (1 best paper),
- Development of visual analytics systems for urban data,
- Exploration of tensor decompositions for data analysis.

Publications: 1 journal, 3 conferences.

08/14-12/14 **Systems Analyst** Foundation for Space Science, Applications and Technology, SJC, BR
Development of a WebGIS / visual analytics system for the TerraClass project, disseminating knowledge about land use and deforestation in the Amazon Forest.

04/13-05/14 **Research Scholar** College of Physical Education - Unicamp, Campinas, BR
Human motion analysis for underwater sports.
- Development of camera calibration methods for underwater capture,
- Creation of new methods for asynchronous marker reconstruction,
- Development of methods for markerless tridimensional pose recovery.

Publications: 1 journal.

03/09-12/11 **Research Assistant (PhD Candidate)** ESIEE Paris. *DematFactory*, Noisy-le-Grand, FR
Signal processing in digital structures.
- New theory and methods for signal processing in graphs and meshes,
- Applications in the digitization efforts of the French National Library.

Publications: 2 journals, 1 conference.

Education

2009-2012 **Ph.D. in Computer Science** Université Paris-Est, Champs-sur-Marne, France.
A study of some morphological operators in simplicial complex spaces.
Advisors: Prof. Dr. Laurent Najman and Prof. Dr. Jean Cousty

2007-2009 **M.Sc. in Computer Science** Institute of Computing - Unicamp, Campinas, Brazil
Generalized visual rhythm and tracking in sport images.
Advisor: Prof. Dr. Neucimar J. Leite
M.Sc. grant by FAPESP (31,250BRL).
Publications: 2 journal, 4 conferences. (biomechanics)

2002-2006 **B.E. in Computer Engineering** Unicamp, Campinas, Brazil
Information fusion and object tracking in video images.
Undergrad research grant by FAPESP (3,960BRL).
Advisor: Prof. Dr. Neucimar J. Leite

Scientific Community Services

- **Technical Program Committee**: CLEI - SLCGRVPI 2015-, SIBGRAPI 2018-
- **Session chair**: Machine Learning; SIBGRAPI 2015.
- **Reviewer**: IEEE VIS 2015- ; IEEE CG&A 2018- ; IET IPR, 2015- ; SIBGRAPI 2009, 2013, 2016-.
- **Reviewer**: Grants and awards, FAPESP 2013- , FACEPE 2015- .

Selected Publications

1. *Visualizing demographic evolution using geographically inconsistent census data*
   Dias, F; Silver, D.
   SocArXiv 2018/4/1 - Submitted to IEEE VIS 2018
2. *A Hierarchical Network Simplification Via Non-Negative Matrix Factorization*
   Dias, M.; Mansour, M.; Dias, F.; Petronetto, F.; Silva, C.T; Nonato, L. G.
   Sibgrapi - Conference on Graphics, Patterns and Images. Oct 2017.
   Honorable mention for Computer Graphics and Visualization
3. *Wavelet-based Visual Analysis of Dynamic Networks*
   Dal Col, A.; Valdivia, P.; Petronetto, F.; Dias, F.; Silva, C.T.; Nonato, L. G.
   IEEE Transactions on Visualization and Computer Graphics. Aug. 2017
4. *Wavelet-based Visual Analysis for Data Exploration*
   Dal Col, A.; Valdivia, P.; Petronetto, F.; Dias, F.; Silva, C.T.; Nonato, L. G.
   IEEE Computing in Science & Engineering. Volume: 19, Issue: 5, 2017.
5. *Watersheds on hypergraphs for data clustering*
   Dias, F.; Mansour, Moussa R.; Valdivia, P., Cousty, J; Najman, L.
   13th International Symposium on Mathematical Morphology, 2017, France.
6. *Topological Analysis of Inertial Dynamics*
   Sagrista, A.; Jordan, S.; Just, A; Dias, F.; Nonato, L.G.; Sadlo, F.
   IEEE Transactions on Visualization and Computer Graphics/SciVis, 2016.
7. *Improved accuracy in 3D analysis using DLT after lens distortion correction*
   MM Rossi, AP Silvatti, FAS Dias, RML Barros
   Computer methods in biomechanics and biomedical engineering 18 (9), 993-1002
8. *Wavelet-based Visualization of Time-Varying Data on Graphs*
   Valdivia, P.; Dias, F.; Petronetto, F.; Silva, C.T.; Nonato, L.G.
   IEEE VAST, 2015, USA.

9. *Some Operators from Mathematical Morphology for the Visual Analysis of Georeferenced Data*
   Dias, F.; Nonato, L.G.
   WVIS, SIBGRAPI, 2015, Brazil.
   Best paper award.
10. *Using Digital Image Processing to Estimate the Depth of Urban Streams*
    Ortigossa, E.; Dias, F.; Ueyama, J.; Nonato, L.G.
    Workshop of Undergraduate Works, SIBGRAPI, 2015, Brazil.
    Best paper award.
11. *Dimensional operators for mathematical morphology on simplicial complexes*
    Dias, F; Cousty, J; Najman, L.
    Pattern Recognition Letters, 2014.
12. *Quantitative underwater 3D motion analysis using submerged video cameras: accuracy analysis and trajectory reconstruction*
    Silvatti, A.; Cerveri, P. ; Telles, T. ; Dias, F.; Baroni, G. ; Barros, R.
    Computer Methods in Biomechanics and Biomedical Engineering, 2013.
13. *Morphological filtering on graphs*
    Cousty, J.; Najman, L.; Dias, F.; Serra, J.
    Computer Vision and Image Understanding, 2012.
14. *Some morphological operators on simplicial complexes*
    Dias, F. ; Cousty, J. ; Najman, L.
    Discrete Geometry for Computer Imagery, 2011, France
    Short list (3) for best student paper award.