

Biographical Sketch
DANIELA M. USHIZIMA
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Data Scientist Fellow
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Education and Training

Lawrence Berkeley National Lab	Data Analysis and Visualization	PostDoc	2007-2010
University of Sao Paulo	Computational Physics	M.S. / Ph.D.	2000 / 2004
Federal University of Sao Carlos	Computer Science	B.S.	1998

Professional Appointments

2014-present	University of California, Berkeley – BIDS Data Scientist fellow;
2014-present	Lawrence Berkeley National Laboratory, Berkeley, CA – Staff Scientist;
2013-present	LBNL, Berkeley, CA – Head Deputy of Vis-analytics Group;
2009-present	Lawrence Berkeley National Laboratory, Berkeley, CA – NERSC Consultant;
2011–2014	Lawrence Berkeley National Laboratory, Berkeley, CA – Research Scientist;
2012–2013	Statistical and Applied Mathematical Sciences on Imaging, as part of the SAMSI Program on Massive Datasets – Working Group Lead;
2005–2007	Catholic University of Santos, Sao Paulo, Brazil – Professor in Computer Science, Head of Computer Vision Group, Researcher;
2005–2007	Natcomp Systems, Santos, Sao Paulo, Brazil – Computer Vision Consultant;
2004	Ablevision Systems, Sao Carlos, SP, Brazil – Computer Vision Consultant;
2004	University of California, Santa Barbara – Visiting Researcher;
1997	Dixtal Biomedica S.A., Sao Paulo, SP, Brazil – Software Engineer;
1997	Microprocessor Lab., Federal University of Sao Carlos – Teacher Assistant;
1996	Technological Park, Sao Carlos, SP, Brazil – Research Assistant.

Selected Awards

April 2014	1 st Place in Cervical Cell Segmentation Challenge, IEEE ISBI - deliverable=code.
July 2014	Data Scientist Fellowship by the Berkeley Institute for Data Sciences, UC Berkeley and Sloan-Moore Foundation - award = 30% FTE funding for FY2015;
Aug 2014	Scientific Excellence by the American Chemistry Society - deliverable=paper;

Selected Recent Publications

1. D.M. Ushizima, T. Perciano, H. Krishnan, B. Loring, H. Bale, D. Parkinson, and J. Sethian. Structure recognition from high resolution images of ceramic composites. *IEEE International Conference on Big Data*, October 2014.
2. K. Odziomek, D.M. Ushizima, M. Haranczyk, and T. Puzyn. Toward quantitative structure activity relationship (QSAR) models for nanoparticles. *American Chemical Society National Meeting - Scientific Excellence Award*, August 2014.
3. D.M. Ushizima, A.G.C. Bianchi, and C. Carneiro. Segmentation of subcellular compartments combining superpixel representation with voronoi diagrams. *IEEE International Symposium on Biomedical Imaging (ISBI) - 1st place in Code Competition*, April 2014.
4. I.C. Paula Jr., F. N. S. Medeiros, F. N. Bezerra, and D. M. Ushizima. Multiscale corner detection in planar shape. *Journal of Mathematical Imaging and Vision*, 45:251–263, Mar 2013.

5. D. M. Ushizima, D. Morozov, G. H. Weber, A. G.C. Bianchi, J. A. Sethian, and E. Wes Bethel. Augmented topological descriptors of pore networks for material science. *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE Vis 2012)*, 18(12):2041–2050, 2012. LBNL-5964E.
6. D.M. Ushizima, J. Ajo-Franklin, A. Macdowell, P. Nico, D. Parkinson, Bethel E.W, and Sethian J.A. Statistical segmentation and porosity quantification of 3d x-ray microtomography. In *SPIE Optics and Photonics*, volume 8135-1, pages 1–14, 2011.
7. D.M. Ushizima, G.H. Weber, Ajo-Franklin, Kim J., Macdowell Y., Morozov A., P. D., Nico, D. Parkinson, D. Trebotich, J. Wan, and Bethel E.W. Analysis and visualization for multiscale control of geologic co2. *Journal of Physics: Conf. Series, Proc. SciDAC*, 2011.
8. E.A. Carvalho, D.M. Ushizima, F.N.S. Medeiros, C.I.O. Martins, R.C.P. Marques, and I.N.S. Oliveira. Sar imagery segmentation by statistical region growing and hierarchical merging. *Digital Signal Processing*, 20(5):1365–1378, 2010.
9. Gladeston C. Leite, D. M. Ushizima, Fatima N. S. Medeiros, and Gilson G. de Lima. Wavelet analysis for wind fields estimation. *Sensors*, 10(6):5994–6016, 2010.
10. R. C. P. Marques, F. N. S. Medeiros, and D. M. Ushizima. Target detection in sar images based on a level set approach. *Trans. Sys. Man Cyber Part C*, 39:214–222, March 2009.

Advisees

1. 2014-present: Talita Perciano - LBNL (postdoc researcher - sponsored by DOE);
2. 2013-present: Kate Odziomek - LBNL (PhD student - sponsored by the European Union);
3. 2012-2013: Andrea Bianchi - LBNL (postdoc - sponsored by the Brazilian Government);
4. 2013: Salma Elaoud - LBNL (visiting researcher - sponsored by the Department of State);
5. 2013: Nadia Castro - LBNL (undergraduation - sponsored by CSE, DOE);
6. 2012: Christina de Bianchi - LBNL (undergraduation - sponsored by SULI, DOE);
7. 2011-2012: Ialis Cavalcante Jr. - Federal University of Ceara, Fortaleza, Ceara (Ph.D.);
8. 2009-2010: Gladeston Leite - Federal University of Ceara, Fortaleza, Ceara, Brazil (Ph.D.);
9. 2006: Aline Giunje Arantes, Rafael F. de Oliveira - Catholic University of Santos, Sao Paulo;

Selected Synergy Activities

1. Mentor for Grace Hopper Conference, dedicated to empowering women in STEM (2013-2014);
2. Mentor for TechWomen, U.S. Department of State, Bureau of Educational and Cultural Affairs (2013);
3. Instructor for Black Girls Code, NGO dedicated to empowering girls into STEM (2014) ;
4. Instructor for Hour of Code, Head Royce School, Oakland, CA, for empowering middle school into STEM (2013);
5. Software engineer for Bayes Impact Hackathon (2014);
6. Lecturer for LBNL-CRD, several outreach programs;
7. Computer Vision Expert for the Center of Applied Mathematics for Energy Related Applications (CAMERA), LBNL-DOE (2013-current);
8. Lead Researcher of Improvement of Cervical Cancer Analysis on Developing Countries, collaboration with the Federal University of Ouro Preto, MG, Brazil (2013-current);
9. Lead of the Imaging Working Group for the Program on Statistical and Computational Methodology for Massive Datasets - SAMSI (2011-2012);
10. Program committee member: Super Computing (2014), UCSF-LBNL Workshop on Precision Medicine (2012-2013), Integrated Bioimaging Initiative (2011-2013), International Symposium on Visual Computing (2011), VII International Conference on Machine Learning and Applications (2008), SIAM Imaging Science minisymposium organizer (2008, 2010);
11. Reviewer for scientific journals/panels/conferences: IEEE Transactions on Medical Imaging (2014), Super Computing (2014), Signal Image and Video Processing (2013), The Imaging

Science Journal (2011), Journal of Mathematical Imaging and Vision (2011-2012), International Journal of High Performance Computing (2011), International Symposium on Visual Computing (2011-2013), Tapia Celebration of Diversity in Computing (2011), Grace Hopper Conference (2010-2014), IEEE Transactions on Systems, Man and Cybernetics (2008-2010), IEEE Transactions on Biomedical Imaging and Engineering (2011-2012), DOE panels (2009-2013), Brazilian Symposium in Computer Graphics and Image Processing (2004 - 2006), EURASIP Paper Reviewer (2002 - 2004).