

Cláudio T. Silva

Professor of Computer Science and Engineering and Data Science

Tandon School of Engineering
New York University
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Professional Preparation

- Post-doc, Applied Mathematics and Statistics 1996-7
State University of New York at Stony Brook
Concentration Area: Computational Geometry
Mentor: Distinguished Professor Joseph S.B. Mitchell
- Ph.D., Computer Science December 1996
State University of New York at Stony Brook
Dissertation Title: “Parallel Volume Rendering of Irregular Grids”
Advisor: Distinguished Professor Arie E. Kaufman
- M.S., Computer Science May 1993
State University of New York at Stony Brook
- B.S., Mathematics July 1990
Universidade Federal do Ceará (Brazil)

Professional Experience

- Center for Data Science, New York University
 - Interim Director, (September 2016–)
 - Associated Faculty, (September 2013–)
- Computer Science & Engineering, School of Engineering, New York University
 - Professor (July 2011–)
 - Research Professor (October 2010–June 2011)
 - Engineer-in-Residence, Incubator (December 2012–)
- Center for Urban Science and Progress, New York University
 - Head of Disciplines (September 2012–August 2015)
- Department of Computer Science, Courant Institute of Mathematical Sciences, NYU
 - Affiliated Faculty (December 2011–)
- Major League Baseball (MLB) Advanced Media

- Consultant (February 2012–)
- Modelo, Inc.
 - Co-founder (2011)
- School of Computing, University of Utah
 - Adjunct Professor (July 2011–)
 - Professor (July 2010–June 2011)
 - Associate Professor (October 2003–June 2010)
- Guest Professor, Linköping University, Sweden, (January 2010–December 2012)
- Scientific Computing and Imaging (SCI) Institute, University of Utah
 - Associate Director (January 2008–May 2009)
 - Faculty Member (October 2003–June 2011)
- Visiting Researcher, ETH Zurich, (November 2010)
- VisTrails, Inc. (2007) [University of Utah startup company: www.vistrails.com]
 - Co-founder
 - Chief Scientist
- Participating Guest Researcher (April 2003–), Lawrence Livermore National Laboratory.
- Faculty Scholar (January 2003–March 2003), Lawrence Livermore National Laboratory.
- Associate Professor (September 2002–April 2006; on leave starting October 2003), Department of Computer Science & Engineering, OGI School of Science & Engineering, Oregon Health & Science University.
- Information Visualization Research Department, AT&T Labs-Research.
 - Principal Member of Technical Staff (April 2002–September 2002)
 - Senior Member of Technical Staff (July 1999–April 2002)
- Adjunct Assistant Professor, Department of Applied Mathematics and Statistics, State University of New York at Stony Brook, July 1998–July 2000.
- Research Staff Member, Visual and Geometric Computing, IBM T. J. Watson Research Center, December 1997–July 1999.
- Research Associate, Computational Geometry Lab (Joseph S.B. Mitchell, Director). Department of Applied Mathematics and Statistics, State University of New York at Stony Brook, September 1996–December 1997.
- Researcher, Visualization Group, Sandia National Laboratories, May 1995–December 1997.
- Teaching and Research Assistant, Visualization Lab (Arie Kaufman, Director). Department of Computer Science, State University of New York at Stony Brook, 1991–1995.
- Summer Intern, Brookhaven National Laboratories, 1992.
- Summer Intern, Philips Laboratories, 1991.

Honors, Distinctions, and Achievements

- Best demo honorable mention award – SIGMOD 2017
- (student award) 2017 Henning Biermann Award from the Courant Institute
advisee: Dr. Bowen Yu (2017)
- Best paper honorable mention award – IEEE Data Science and Advanced Analytics, 2016
- Elected Chair of IEEE Technical Committee on Visualization and Computer Graphics (2015–2017)
- (student award) Pearl Brownstein Doctoral Research Award (for PhD thesis),
advisee: Dr. Nivan Ferreira (2015)
- (student award) Courant’s Matthew Smosna Prize for excellence in computer science (for MS thesis),
advisee: Yunzhe Jia (2015)
- Alpha Award for Best Analytics Innovation/Technology for MLB Advanced Media’s Statcast player tracking system, 2015 MIT Sloan Sports Analytics Conference
- 2014 IEEE VGTC Visualization Technical Achievement Award “in recognition of seminal advances in geometric computing for visualization and for contributions to the development of the VisTrails data exploration system.”
- Outstanding Partnership, Federal Laboratory Consortium for Technology Transfer for Ultrascale Visualization Climate Data Analysis Tools (UV-CDAT), 2014
- (student award) VPG Best Dissertation Finalist,
advisee: Dr. Tiago Etienne (2013)
- IBM Faculty Award, 2013.
- Best paper honourable mention award – EuroVis 2013
- 2013 IEEE Fellow “for contributions to geometric computing and visualization.”
- Best paper award – SIBGRAPI 2012
- Best panel award – IEEE VisWeek 2011
- Best paper award – 2nd prize, EuroVis 2011
- Best paper award, ACM Eurographics Symposium on Parallel Graphics and Visualization 2011.
- Finalist, Executable Paper Grand Challenge, 2011.
- 2011 IEEE Computer Society, Certificate of Appreciation “for outstanding service and performance as Co-Chairman of VisWeek 2010.”
- Best paper award, EUROGRAPHICS 2010 Educator Program.
- Best poster award, 24th Brazilian Symposium On Databases (SBBD 2009)
- 2009 Utah Innovation Awards, VisTrails Provenance Plugin for Autodesk Maya.
- IEEE Senior Member (since 2008).

- Best paper award, IEEE Shape Modeling International 2008.
- Best paper award, IEEE Visualization 2007.
- Best paper finalist, IEEE Shape Modeling International 2007.
- Dean's Teaching Commendation, Spring 2007.
- IBM Faculty Award, 2007.
- IBM Faculty Award, 2006.
- IBM Faculty Award, 2005.
- Best paper finalist, IEEE Visualization 2001.
- Best paper finalist, IEEE Visualization 1999.
- IBM First Plateau Invention Award, 1999.
- IBM Research Division "accomplishment list" for MPEG-4 3D Model Coding, 1998.
- National Science Foundation Post-Doctoral CISE Associateship Award, 1996–1997.
- Best paper finalist, ACM/IEEE Volume Visualization 1996.
- Doctoral Fellowship – Brazilian Research Council (CNPq – Brazil), 1991–1995.
- 1st place, Entrance exam, Mathematics, Federal University of Ceara, Brazil.

Media Coverage

- New York Times (online): Mapping the Shadows of New York City: Every Building, Every Block; <https://goo.gl/dToiem>
- New York Times (print and online): To Create a Quieter City, They're Recording the Sounds of New York; <https://goo.gl/oimnsK>
- Economist (print and online): Listen to the music of the traffic in the city; <https://goo.gl/jIfvc2>
- Economist (print and online): Every step they take; <https://goo.gl/pEZNGj>
- Vice Sports, Future of the game: The era of wearables (video); <http://goo.gl/D6XGRC>
- Vice Sports, Future of the game: Baseball's latest statistical revolution (video); <http://goo.gl/N4f3sh>
- NetworkWorld, How the cloud gives Major League Baseball a new world of stats; <http://goo.gl/1uJfkO>
- Interview at archspeech (in Russian); <http://goo.gl/sBquLO>
- Claudio Silva: The future of the interdisciplinary approach, capable of solving complex problems of cities (in Russian); <http://goo.gl/vngUOI>
- Do not spoil the unsuccessful city buildings (in Russian); <http://goo.gl/zolzs8>
- (ABC News, USA Today, Sun Times, ...), Data Deluge: MLB Rolls out Statcast Analytics on Tuesday; <http://goo.gl/m0HXEm>

- PR Newswire, McGraw-Hill Education Takes Important Step in Open Technology, Enabling Educators to Build Personalized Learning Experiences; <http://goo.gl/waklJU>
- MLB News, Statcast wins prestigious Alpha Award for innovation; <http://goo.gl/u0745S>
- Newsweek, Can baseball get more interesting to watch with Big Data?; <http://goo.gl/vWK5jm>
- Wall Street Journal, Billy Beane Expects Big Things from MLBs Big Data Play; <http://goo.gl/mGrBj9>
- MLB.com, Statcast interview (video); <http://goo.gl/TVQ9Hy>
- MLB News, MLBAM introduces new way to analyze every play; <http://goo.gl/DW52zW>

Publications

Google Scholar h-index: 55; total citations: 13,436 (date: 6/25/17)

Book (1)

- [1] *An Introduction to Verification of Visualization Techniques*, T. Etienne, R. Kirby and C. Silva, Morgan & Claypool Publishers, 2015.

Journal Publications (110)

- [2] *Dynamic Scene Graph: Enabling Scaling, Positioning, and Navigation in the Universe*, E. Axelsson, A. Bock, J. Costa, C. Emmart, C. Silva, and A. Ynnerman, Computer Graphics Forum (Proceedings of EuroVis 2017), accepted with minor revisions.
- [3] *ARIES: Enabling Visual Exploration and Organization of Art Image Collections*, L. Crissaff, L. Ruby, S. Deutch, L. DuBois, J.-D. Fekete, J. Freire, and C. Silva, IEEE Computer Graphics and Applications, accepted.
- [4] *TopKube: A Rank-Aware Data Cube for Real-Time Exploration of Spatiotemporal Data*, F. Miranda, L. Lins, J.T. Klosowski, C. Silva, IEEE Transactions on Visualization and Computer Graphics, to appear.
- [5] *STaRS: Simulating Taxi Ride Sharing at Scale*, M. Ota, H. Vo, C. Silva, and J. Freire, IEEE Transactions on Big Data, to appear.
- [6] *State of the Art in Surface Reconstruction from Point Clouds*, M. Berger, A. Tagliasacchi, L. Seversky, P. Alliez, G. Guennebaud, J. Levine, A. Sharf and C. Silva, Computer Graphics Forum, 36(1):301–329, 2017.
- [7] *Urban Pulse: Capturing the Rhythm of Cities*, F. Miranda, H. Doraiswamy, M. Lage, K. Zhao, B. Gonçalves, L. Wilson, M. Hsieh, and C. Silva, IEEE Transactions on Visualization and Computer Graphics (SCIVIS 2016), 23(1): 791-800 (2017).
- [8] *VisFlow - Web-based Visualization Framework for Tabular Data with a Subset Flow Model*, B. Yu and C. Silva, IEEE Transactions on Visualization and Computer Graphics (VAST 2016), 23(1): 251-260 (2017).
- [9] *Bijection Maps from Simplicial Foliations*, M. Campen, C. Silva, and D. Zorin, ACM Transactions on Graphics (SIGGRAPH 2016), 35(4):74, 2016.

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