CURRICULUM VITAE

Nivan Ferreira

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Education

2015 Ph.D. in Computer Science, New York University
Thesis: Visual Analytics Techniques for Exploration of Spatiotemporal Data
Advisor: Cláudio Silva
2010 M.Sc. in Mathematics, Federal University of Pernambuco, Brazil
2009 B.Sc. in Computer Science, Federal University of Pernambuco, Brazil

Research Interests

- Information Visualization
- Visual Analytics
- Interactions of Machine Learning and Visualization

Honors and Awards

- Pearl Brownstein Doctoral Research Award, given to PhD students in the Department of Computer Science and Engineering whose doctoral research shows the greatest promise, NYU Polytechnic School of Engineering, 2015.
- Best Paper Honorable Mention, Eurovis 2013
- Deborah Rosenthal, MD Award, for outstanding performance on the PhD qualifying examination, Polytechnic Institute of NYU, 2013
- Honorable Mention, Brazilian Mathematics Olympiad for University Students, 2007
- Gold Medal, Brazilian Mathematics Olympiad for Public Schools, 2005
- Bronze Medal, Brazilian Physics Olympiad, 2005
- Bronze Medal, Brazilian Physics Olympiad, 2004

Professional Experience

Sep. 15	–	Present	Postdoctoral Scholar, Department of Computer Science, University of Arizona Supervisor: Carlos Scheidegger
Sep. 11	–	Aug. 15	Research Assistant, New York University Polytechnic School of Engineering Supervisor: Cláudio Silva
Jun. 13	–	Aug. 13	Research Intern, Microsoft Research Supervisor: Danyel Fisher
Jun. 11	–	Jul. 11	Research Intern, AT&T Labs Research Supervisors: James Klosowski, Carlos Scheidegger
May. 10	–	Mar. 11	Research Assistant, University of Utah Supervisor: Cláudio Silva
Jan. 08	–	Dec. 08	Teaching Assistant for *MA531: Linear Algebra for Computer Science* Universidade Federal de Pernambuco, Brazil Supervisor: Dr. Silvio de Barros Melo

Synergistic Activities

- *Reviewer*: IEEE Information Visualization, IEEE Vast, IEEE Transactions on Big Data, The Visual Computer Journal, Journal of Visualization, Cartography and Geographic Information Science
- Workshop Organizer: Data Systems for Interactive Analysis, 2015.

Publications

1. *Topology-based Catalogue Exploration Framework for Identifying View-Enhanced Tower Designs,* H. Doraiswamy, **N. Ferreira**, M. Lage, H. Vo, L. Wilson, H. Werner, M. Park, and C. Silva. ACM Transactions on Graphics (TOG), vol.34, no.6, pp. 230:1–230:13, Nov. 2015.
2. *Urbane: A 3D Framework to Support Data Driven Decision Making in Urban Development,* **N. Ferreira**, M. Lage, H. Doraiswamy, H. Vo, L. Wilson, H. Werner, M. Park, and C. Silva. In Proceedings of the IEEE Conference on Visual Analytics Science and Technology (VAST), pp. 97-104, Oct. 2015.
3. *Riding from Urban Data to Insight Using New York City Taxis*, J. Freire, C. Silva, H. Vo, H. Doraiswamy, **N. Ferreira**, and J. Poco. IEEE Data Engineering Bulletin, 37(4):43-55, 2014.
4. *Using Topological Analysis to Support Event-Guided Exploration in Urban Data,* H. Doraiswamy, **N. Ferreira**, T. Damoulas, J. Freire, C. Silva. IEEE Transactions on Visualization and Computer Graphics, vol.20, no.12, pp. 2634-2643, Dec. 2014.
5. *Sample-Oriented Task-Driven Visualizations: Allowing Users to Make Better, More Confident Decisions,* **N. Ferreira**, D. Fisher, A. C. König. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '14), ACM, pp. 571-580, Apr. 2014.
6. *Visual Exploration of Big Spatio-temporal Urban Data: A Study of New York City Taxi Trips,* **N. Ferreira**, J. Poco, H. T. Vo, J. Freire, C. Silva. IEEE Transactions on Visualization and Computer Graphics, vol.19, no.12, pp. 2149-2158, Dec. 2013.
7. *Vector Field k-Means: Clustering Trajectories by Fitting Multiple Vector Fields.* **N. Ferreira**, J. Klosowski, C. Scheidegger, C. Silva. Computer Graphics Forum, 32(3):201–210, 2013. **Honorable mention for Best Paper award**.
8. *BirdVis: Visualizing and Understanding Bird Populations,* **N. Ferreira**, L. Lins, D. Fink, S. Kelling, C. Wood, J. Freire, C. Silva. IEEE Transactions on Visualization and Computer Graphics, vol.17, no.12, pp. 2374-2383, Dec. 2011.

Presentations

Invited Talks

- *Interactive Visualization Techniques for Urban Data Analysis.* Colloquium at Texas Tech University, Feb 11th 2016
- *Interactive Visualization Techniques for Urban Data Analysis.* Department of Computer Science Seminar at University of Miami, Jan 25th 2016

Conference Presentations

- Sample-Oriented Task-Driven Visualizations: Allowing Users to Make Better, More Confident Decisions. ACM CHI, Toronto, Canada, 2014.
- Vector Field k-Means: Clustering Trajectories by Fitting Multiple Vector Fields. Eurovis 2013, Leipzig, Germany, 2013.
- BirdVis: Visualizing and Understanding Bird Populations. IEEE Infovis 2011, Providence, RI, 2011.

Pending Proposals

- National Science Foundation, *III: Medium: Collaborative Research: Interactive Visualization for Global Understanding of Deep Neural Networks*, C. Scheidegger, K. Cho, N. Ferreira and C. Silva. US$ 1.2M. Pending.

Teaching

- New York University: Co-taught Principles of Urban Informatics I (NYU CUSP), Fall 2013, Fall 2014.

Software

- *TaxiVis* is a visual analytics system for exploration of large collections of origin destination taxi trip data. The system has been deployed at the NYC Taxi & Limousine Commission and the NYC Department of Transportation.
  Project Website: `http://vgc.poly.edu/projects/taxivis`

- *BirdVis* is a visualization system for visualization of bird population models. The system was developed in collaboration with Cornell Lab of Ornithology, where it has been deployed.
  Project Website: `http://birdvis.org`
  Source Code: `https://github.com/ViDA-NYU/birdvis`

- *Vector Field K-Means.* C++ Implementation of the Vector Field K-Means Algorithm.
  Source Code: `https://github.com/nivan/vfkm`

Other Skills

- Programming: C, C++, C#, Java, Python, Shaders
- Languages: English (fluent), Portuguese: (native)