

# CURRICULUM VITAE

**Judah B. De Paula**

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Citizenship: U.S. Citizen

## Education

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**PhD Candidate, University of Texas at Austin, Austin, Texas.**

Since August 2000; Advanced to Candidacy Spring 2005.  
Expected Graduation Summer 2007.

**Dissertation:** “Modeling the self-organization of color-selective neurons in the visual cortex.”

The research focuses on using a computational model to make predictions about the color selective neurons found in the visual cortex of trichromatic mammals.

The dissertation is co-advised by Risto Miikkulainen from the department of Computer Sciences, University of Texas at Austin, and Jim Bednar from the School of Informatics, University of Edinburgh, Scotland. The other members of the committee are in the departments of Computer Sciences and Neurobiology.

**B.S. Computer Sciences, Georgia Institute of Technology, Atlanta, Georgia. 2000.**

With Highest Honors.

Both Minor and Certificate received in Cognitive Sciences.

## Employment

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**University of Texas at Austin, Since Fall 2006.**

**Assistant Instructor, Department of Computer Sciences.**

- Developed and currently instructing Programming Languages: Python.  
<http://z.cs.utexas.edu/users/judah/body/teaching/index.html>

**University of Texas at Austin, Fall 2000 to Fall 2004, Spring 2006.**

**Teaching Assistant, College of Natural Sciences.**

- Taught sixty-minute discussion sections weekly.
- Duties included: Head TA (coordinating additional TAs), designing class materials and assignments, grading, and holding office hours.

- Classes included: Theory in Programming Practice, Artificial Intelligence, Distributed Computing, Analysis of Programs - Honors, Knowledge Based Systems, and Elements of Computers and Programming.

**University of Texas at Austin**, Summer 2003, Summer 2004, 2005.

**Research Assistant, Department of Computer Sciences.**

- Research Assistant for the Topographica project with the Neural Network Research Group.
- Primary duty was the development of the Topographica simulator using Python, and Tcl/Tk. (<http://topographica.org>)
- Funded by NIMH Human Brain Project under grant 1R01-MH66991.

**National Aeronautics and Space Administration (NASA)**, Mountain View CA.

**Internship for ImageBot Project** Summer 2001, Summer 2002.

- Worked on the ImageBot project for Knowledge Base controlled data management of satellite imagery. (Primary Investigator: Keith Golden.)
- Created SQL query database management system.
- Created a query inference algorithm for query responses using composite data.

## **Publications and Invited Talks**

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### **Refereed Journal Articles:**

J. De Paula, J. Bednar, and R. Miikkulainen (in review). A self-organizing model of color, ocular dominance, and orientation selectivity in the primary visual cortex.

J. Bednar, J. De Paula, and R. Miikkulainen (2005). Self-organization of color opponent receptive fields and laterally connected orientation maps. *Neurocomputing* 65-66, p. 69-76.

J. Bednar, Y. Choe, J. De Paula, R. Miikkulainen, J. Provost, and T. Tversky (2004). "Modeling cortical maps with Topographica.", *Neurocomputing*, pages 1129-1135. Presented at the 2003 Computational Neuroscience meeting.

### **Refereed Presentations:**

J. De Paula (2007, February). "Topographica: Python used for computational neuroscience." Python Convention 2007 (PyCon'07), Addison, TX.

## Invited Presentations:

“The RSA public key cryptographic algorithm.” (2007, February). Messiah College, Grantham, PA.

“Modeling topographic maps in the visual cortex.” (2007, February). Connecticut College, Trinity College, Wesleyan University (CTW) Consortium Middletown, CT.

“Modeling color selective maps in the visual cortex.” (2005, April). Neuroscience Graduate Student Assembly Conference, University of Texas, Austin TX.

“Partitioning algorithm for data tracking.” (2003, March). Science Undergraduate Research Group, University of Texas, Austin TX.

## Conference Abstracts

J. De Paula, J. Bednar, R. Miikkulainen (2007). “Modeling self-organizing tri-chromatic color selective regions in primary visual cortex.” Poster and abstract to be presented at 2007 Computational Neuroscience Conference, Toronto, Canada.

J. De Paula, J. Bednar, R. Miikkulainen (2007). “Modeling self-organizing color selective regions in V1.” Poster and abstract presented at 11th Annual Institute for Neuroscience Symposium, Austin, TX.

J. De Paula, J. Bednar, R. Miikkulainen (2006). “Modeling self-organizing color selective regions in V1.” Poster and abstract presented at Gulf Coast Consortium for Theoretical and Computational Neuroscience, Rice University, Houston, TX.

J. Bednar, Y. Choe, J. De Paula, R. Miikkulainen, and J. Provost (2005). “Modeling the visual cortex using the Topographica cortical map simulator.” In Society for Neuroscience Abstracts, Society for Neuroscience, 2005.

J. Bednar, Y. Choe, J. De Paula, R. Miikkulainen, J. Provost (2005). “The Topographica cortical map simulator.” Perception. Poster and abstract at the European Conference on Visual Perception, A Coruña, Spain.

J. De Paula, J. Bednar, R. Miikkulainen (2004). “Modeling self-organization of color-opponent receptive fields and laterally connected orientation maps and color blobs in V1.” In Society for Neuroscience Abstracts. Society for Neuroscience, 2004. Program No. 174.11.

## Professional Memberships and Service

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Faculty Hiring Committee member for University of Texas Computer Science Department, 2006–2007.

Graduate Student Faculty Hire Advising Committee member for University of Texas Computer Science Department, 2006–2007.

Space Committee member for University of Texas Computer Science Department, 2004–2006.

Elected officer for Graduate Research Association for Computer Science (GRACS), 2003.

Society for Neuroscience member, since 2003.

Computer Science department coordinator for the graduate student open-discussion forum, 2002–2004.

## References

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### **Eyal Seidemann**

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### **Jayadev Misra (Teaching Reference)**

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