

## Curriculum Vitae

**Vikranth Rao Bejjanki**

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### Contact Information

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Date of Birth: April 5, 1982  
Nationality: Indian

### Education

August 2004- Ph.D. candidate in Brain and Cognitive Sciences, University of Rochester  
Advisor: Dr. Alexandre Pouget Expected Graduation: December 2009

October 2008 M.A. in Brain and Cognitive Sciences, University of Rochester

July 2007 Graduate Summer School on Probabilistic Models of Cognition: The  
Mathematics of Mind, UCLA, Los Angeles, CA

August 2006 C.I.A.R. Summer School on Learning and Vision in Biology and  
Engineering, Toronto, Canada

August 2005 E.U. Advanced Course in Computational Neuroscience, Arcachon, France

June 2005 Summer School on Math and Brain, Jussieu Institute of Mathematics, Paris,  
France

June 2004 B.A. *with high distinction* in Cognitive Science, State University of New  
York at Buffalo  
Thesis: *The Role of Predictability and Eye Movements in Linear  
Representational Momentum*

June 2004 B.S. *with distinction* in Computer Engineering, State University of New York  
at Buffalo  
Advanced Honors Thesis: *Princess Cassie: An embodied Cognitive Agent in  
a Virtual World*  
Departmental Honors Project: *Natural Language Processing without human  
assistance*

## **Awards and Fellowships**

- 2004-2009 Departmental Fellowship for Graduate Study, Brain and Cognitive Sciences, University of Rochester
- 2004-2009 Presidential Fellowship for Graduate Study, State University of New York at Buffalo (declined in favor of the Departmental Fellowship for graduate study at the University of Rochester)
- 2003-2004 Motorola Senior Scholarship, Department of Computer Science and Engineering, State University of New York at Buffalo
- 2001-2004 Advanced Honors Scholar, State University of New York at Buffalo
- 2001-2003 Dean's List, State University of New York at Buffalo
- 2000-2003 School of Engineering Dean's List, State University of New York at Buffalo
- 2002, 2004 Listed in Who's Who of students in American Universities and Colleges

## **Research Experience**

- 2007- Rochester Infant Lab of Dr. Richard Aslin  
Department of Brain and Cognitive Sciences, U. of Rochester
- Exploring computational models of cognition, cue reliability and statistical learning in adults and across development. Exploring multi-sensory integration in speech.
- 2004- Computational Neuroscience Laboratory of Dr. Alexandre Pouget  
Department of Brain and Cognitive Sciences, U. of Rochester
- Exploring theories of population coding, information processing and statistical inference in the visual cortex using simulated networks of spiking neurons. Exploring neural theories for Perceptual Learning.
- 2002-2004 Visual Perception Laboratory of Dr. William C. Schmidt  
Department of Psychology, SUNY at Buffalo
- Explored the role of eye movements and predictability in linear "Representational Momentum"
- 2002-2004 Artificial Intelligence Laboratory of Dr. Stuart C. Shapiro  
Department of Computer Science and Engineering, SUNY at Buffalo
- Developed artificially intelligent computational agents embodied as actors in a Virtual Drama, as part of the VR/Agents group at SUNYAB

2002-2004            Contextual Vocabulary Acquisition Group  
Department of Computer Science and Engineering, SUNY at Buffalo

Developed a Generalized Augmented Transition Network (GATN) grammar for Natural Language Processing, with Dr. William J. Rapaport.

### **Teaching Experience**

Spring 2009            Teaching Assistant  
Introduction to Computational Neuroscience (Graduate Class)  
Instructor: Dr. Alexandre Pouget, Brain and Cognitive Sciences, UR

Fall 2006                Teaching Assistant  
Experimental Design and Analysis  
Instructor: Dr. David Knill, Brain and Cognitive Sciences, UR

Spring 2006            Teaching Assistant  
Foundations of Cognitive Science  
Instructor: Dr. Robert Jacobs, Brain and Cognitive Sciences, UR

Spring 2005            Teaching Assistant  
Cognitive Psychology  
Instructor: Dr. Daniel Grodner, Brain and Cognitive Sciences, UR

Spring 2003, 2004    Student Assistant (Undergraduate Teaching Assistant)  
Introduction to Microprocessors (Laboratory)  
Instructor: Dr. Kris Schindler, Computer Sc. & Engg., SUNY at Buffalo

2001-2004            Academic Tutor  
Athlete Academic Services  
State University of New York at Buffalo, Buffalo, NY

### **Professional Experience**

2003-2004            Software Development Intern  
Software Development Division  
Computer S.O.S., Cheektowaga, NY

2000-2004            Computing Consultant  
Academic Services, Computing and Information Technology  
State University of New York at Buffalo, Buffalo, NY

## Presentations

- **Bejjanki V.R.**, Beck J.M., Pouget A., Neural basis of perceptual learning: improved Bayesian inference during sensory representation. Talk presented at the *University of Rochester Neuroscience Retreat*, Rochester, NY, May 22, 2009.
- **Bejjanki V.R.**, Speech perception involves statistically optimal multi-modal integration. Talk presented as part of the *BCS Lunch* series, Department of Brain and Cognitive Sciences, University of Rochester, May, 2009.
- Li R., **Bejjanki V.R.**, Lu Z.L., Pouget A., Bavelier D., Playing action video games leads to better perceptual templates. Poster presented at the annual meeting of the *Vision Sciences Society (VSS)*, Naples, Florida, May 8-13, 2009.
- **Bejjanki V.R.**, Beck J.M., Ma W.J., Pouget A., Neural basis of perceptual learning: improved Bayesian inference during sensory representation. Talk presented at the annual meeting of the *Society for Neuroscience (SFN)*, Washington D.C., November 15-19, 2008.
- **Bejjanki V.R.**, Neural basis of Perceptual Learning. Talk presented as part of the *BCS Lunch* series, Department of Brain and Cognitive Sciences, University of Rochester, October, 2008.
- **Bejjanki V.R.**, Clayards M., Knill D.C., Aslin R.N., Speech perception involves statistically optimal multi-modal integration. Poster presented at the *14<sup>th</sup> Annual Conference on Architectures and Mechanisms for Language Processing (AMLaP)*, Cambridge, U.K., September 4-6, 2008.
- **Bejjanki V.R.**, Ma W.J., Beck J.M., Pouget A., Perceptual learning as improved Bayesian inference in early sensory areas. Poster and oral spotlight presentation at the *Computational and Systems Neuroscience Conference (CoSyNe)*, Salt Lake City, Utah, February 22-25, 2007.
- Beck J.M., **Bejjanki V.R.**, Pouget A., Linear Fisher information in a network of LNP neurons. Poster presented at the *Computational and Systems Neuroscience Conference (CoSyNe)*, Salt Lake City, Utah, February 22-25, 2007.
- **Vikranth B. Rao**, William C. Schmidt, The role of predictability and eye movements in linear Representational Momentum. Poster presented at the *13<sup>th</sup> Annual Meeting of the Canadian Society for Brain, Behavior and Cognitive Science*, Hamilton, Ontario, Canada, June 12-14, 2003.
- **Vikranth B. Rao**, William C. Schmidt, The role of predictability and eye movements in linear Representational Momentum. Poster presented at the *State University of New York at Buffalo, Department of Cognitive Science, Student Poster Session*, Buffalo, NY, April 9, 2003

## Publications

### Research Articles

- Beck J.M., **Bejjanki V.R.**, Pouget A., Linear Fisher information in populations of recurrently connected spiking neurons (Submitted)
- **Bejjanki V.R.**, Beck J.M., Lu Z.L., Pouget A., Neural basis of perceptual learning: improved Bayesian inference during sensory representation (Manuscript in preparation)
- **Bejjanki V.R.**, Clayards M., Knill D.C., Aslin R.N., Speech perception involves statistically optimal multi-modal integration (Manuscript in preparation)
- **Bejjanki V.R.**, Clayards M., Knill D.C., Aslin R.N., Cue integration in vision and in speech: Are they the same problem? (Manuscript in preparation)

### Refereed Conference Proceedings

- Josephine Anstey, Dave Pape, Stuart C. Shapiro, and **Vikranth Rao**, Virtual Drama with Intelligent Agents, *Proceedings of the Ninth International Conference on Virtual Systems and MultiMedia (VSMM)*, Montreal, Quebec, Canada, October 15-17, 2003.

## Service

### At SUNY Buffalo:

- **Residence Hall Advisor** (5/2003 – 5/2004)  
I was responsible for the daily support of 36 students specifically and over 600 students generally.
- **Volunteer Academic Tutor** (01/2003 – 5/2004)  
I was a volunteer academic tutor for the Department of Linguistics at SUNYAB. I worked with Freshman and Sophomore level students, tutoring them in entry-level linguistics classes.
- **Assistant Coach (Volunteer), Men's Varsity Tennis** (8/2001- 12/2002)  
As an undergraduate assistant coach in the SUNYAB Athletic program, my work involved analyzing team strengths/weaknesses and developing strategies. I developed comprehensive match analysis software and helped the team post an undefeated fall season.

## Professional and Honorary Memberships

- Society for Neuroscience
- Tau Beta Pi, National Engineering Honors Society
- Golden Key, International Honors Society
- Eta Kappa Nu, Electrical and Computer Engineering Honors Society

## **Technical Skills**

Extensive programming experience and proficiency in multiple computer languages and operating system platforms.

### **Operating Systems:**

Microsoft Windows  
Unix/Linux  
Solaris CDE

### **Applications:**

Latex, Tex  
Microsoft Office Suite  
Adobe suite  
Electronic – Workbench  
DB Designer  
Most Internet Applications

### **Programming Languages:**

Java  
C/C++, V-C++  
Visual Studio  
Common Lisp  
SNePS suite of languages  
PHP  
MySQL  
Basic/V-Basic  
MATLAB