

Rohit Nambisan

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Tel: 617 840 1223

Education

PhD. in Program in Neuroscience, Boston University

G.P.A: 3.68

Research Focus: Humanoid Robotics, Computer Vision, Image Segmentation, Active Vision, Sensory-Motor Integration

Thesis Advisors: Michele Rucci PhD. and Daniel Bullock PhD.

Certificate in Premedical Studies –Post-Baccalaureate Premedical Program
Columbia University, 2003-2007

B.A. in Cognitive Science, University Of California Berkeley, 1999-2003

Emphasis: Neuroscience

Undergraduate Research Advisors: Richard Ivry PhD. and Eliot Hazeltine PhD.

Science/Research Experience

May 2008-current: Graduate Student Researcher – Active Perception Laboratory (APLab), Department of Cognitive and Neural Systems, Boston University

- Running human psychophysical studies to determine the contribution of eye and head movement in depth perception (3D vision).
- Developing a computational neural model of primate 3D vision.
- Implementing the 3D vision computational model in a humanoid robot.
- Supervising 2 undergraduate student researchers working in humanoid robotics research at the APLab.
- Constructed the MRFM (Maryland Revolving Field Monitor), one of the most precise free-head eyetrackers in the world

April 2006-July 2007: Research Assistant – Taub Institute for Research on Alzheimer's Disease and the Aging Brain

- Running an fMRI (functional Magnetic Resonance Imaging) study to assess age-related memory deficits.

Fall 2004-April 2006: Research Technician – Columbia University Center for Neurobiology and Behavior

- Investigating a primate model of emotional learning using single cell recording techniques.

Summer 2003: Research Technician/Assistant – University of California San Francisco Neurosurgery Department

- Investigated new methods of neuro-transplantation techniques in a rodent model to treat Parkinson's disease.

Summer 2002-Summer 2003: Research Assistant – NASA-Ames Human Performance Laboratory

- Headed an imaging research (fMRI) project investigating neural structures that are active when response expectancies are violated.

Fall 2001-Summer 2003: Research Assistant – Cognition and Action Laboratory,
University of California, Berkeley

- Involved in multiple research projects investigating Sensorimotor Integration and Motor Selection.

Skills

Scientific Protocols:

- Experience Administering Neuropsychological Examinations
- Experience training and testing non-human primates for neuroscientific research.
- Experience with primate neurosurgery and surgical instruments
- Experience working with Plexon Neural Data Acquisition software and hardware.
- Experience working with a Scenotech Mini Bird tracking System.
- Experience working with a Neotonus Neopulse Transcranial Magnetic Stimulator (TMS).
- Experience using MRIREG software and Mini Bird System to localize brain regions for stimulation.
- Certified “soloist scanner” at the Henry J. Wheeler Brain Imaging Center.
 - Knowledge of fMRI protocols with Varian 4 Tesla Magnet System.
 - Experience with 3D reconstruction of imaging data.
 - Experience with analysis of whole brain functional images.

General Skills: Experimental design, data collection, data coding, statistical analysis, public presentation of research in poster formats.

Computer Skills: Unix OS, SPSS, Microsoft Word, Excel, Powerpoint, Tiger OSX applications, MRICRO, MRIREG, Voxbo, Matlab, Emacs, Plexon Data Acquisition, SPM99, Adobe Photoshop, Adobe Illustrator, Labview, Solidworks, Dreamweaver, Retrospect, Microsoft Server, Latex, WinEDT, TexnicCenter, Corel Draw

Programming Language: Matlab, C++, HTML, Scheme, Lisp

Publications

Papers:

“Active 3D Vision in a Humanoid Robot” Fabrizio Santini, Rohit Nambisan, and Michele Rucci. (*in press, International Journal of Humanoid Robotics, September 2009*)

"The Response Signal Method Reveals Age-Related Changes in Object Working Memory" Arjun Kumar, Brian C. Rakitin, Rohit Nambisan, Christian Habeck, and Yaakov Stern. (*Journal of Psychology and Aging, 2008*)

“Independent on-line control of the two hands during bimanual reaching” Jörn Diedrichsen, Rohit Nambisan, Steven W. Kennerley, and Richard B. Ivry. (*European Journal of Neuroscience, March 2004*)

Abstracts:

“Active Depth Perception in Primates and Machines” Dan Bullock, Rohit Nambisan, Fabrizio Santini, and Michele Rucci. *Abstr. NSF Workshop on Emerging Models and Technologies for Computation*

“Age-related Differences in Working Memory as Determined by the Analysis of Speed-accuracy Tradeoff” Brian C. Rakitin, Arjun Kumar, Rohit Nambisan, Christian Habeck, and Yaakov Stern. *Abstr. Cognitive Neuroscience Conference, 2006*

“Two Autopilots, One Brain: Limitations and Interactions During Online Adjustment of Bimanual Reaching Movements” Rohit Nambisan, Jörn Diedrichsen, Richard B. Ivry, Steven Kennerley and Fumiko Maeda. *Abstr. Society for Neurosciences, 2002.*

“The Roles of the Anterior Cingulate Cortex and Prefrontal Cortex in the Detection of Unexpected Events and Erroneous Responses”
Rohit Nambisan, Eliot Hazeltine, Jörn Diedrichsen, Eric Ruthruff, and Roger Remington.
Abstr. Cognitive Neuroscience Society, 2002.

Selection of Action: The influence of TMS on hand choice in reaching.
Andrew Hon, Jörn Diedrichsen, Rohit Nambisan and Richard B. Ivry
Abstr. Cognitive Neuroscience Society, 2002

Awards

Summer 2008 – current: NSF EMT grant funding for doctoral research work.

Fall 2007 – Summer, 2008: NSF CELEST fellowship funding for 1st year of graduate school.

Summer, 2002: Awarded Undergraduate Research Apprenticeship summer scholarship for research work at the Ivry Lab of Cognition and Action.

Summer, 2002-Present: Awarded the San Jose State University Foundation Stipend for research work at NASA-AMES Research Facility.

Fall, 2002: Undergraduate Research Apprenticeship Travel Award Recipient that covered the costs to attend Society of Functional Neurosciences Conference, and perform a Poster Presentation of research findings.

Languages

English, French, Malayalam, Spanish, Italian.

Extracurricular Activities

INDUS Leadership Council Officer (2001-2002)

Music: composing and performing.

Classical violin, all percussion, guitar, bass guitar, piano, and voice. Published 3 albums.