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SRIDHARAN DEVARAJAN

Career and Education

1999-2004 Indian Institute of Technology (IIT), Madras GPA: 3.944/4.0
B.Tech/M.Tech Dual degree (Bachelors and Masters) in Aerospace Engg.

2004 - 2010 Stanford University GPA: 4.023/4.0
Ph.D. in Neuroscience (Advisors: Profs. Eric Knudsen and Kwabena Boahen)

2011 – 2014 Stanford University, Department of Neurobiology
Postdoctoral Scholar (Mentor: Prof. Eric Knudsen)

2015 Indian Institute of Science, Bengaluru, India
Assistant Professor, Centre for Neuroscience (**http://www.cns.iisc.ernet.in/**).

Awards and Recognitions

2014	*Selected speaker,* Young Investigator Meeting, Hyderabad India.
2013	*Selected speaker,* 3rd Annual Stanford Postdoctoral Research Symposium: Empowering Future Leaders (one of ten selected from across Stanford University).
2012	*School of Medicine* ***Dean's Fellowship*** *Award* for Postdoctoral Research, Stanford University
2010	*Gatsby Cosyne Fellowship* for travel to Computational and Systems Neuroscience (COSYNE) Meeting, Salt Lake City, Utah.
2009	*Selected participant*, Neuromorphic Cognition Engineering Workshop, Telluride, Colorado.
2004-2007	***Stanford Graduate (Smith) Fellowship***, Stanford University
2007	*NIH Human Brain Mapping Travel Award* and *Stanford BioX Travel Award*, 14th Annual Meeting of the Organization for Human Brain Mapping (OHBM), Chicago.
2004	***President of India Gold Medal*** for best academic record (highest GPA), Indian Institute of Technology (IIT), Madras
2002-2003	*Ministry of Human Resources and Development* (MHRD) Assistantship. Ranked fourth nationwide (99.50 percentile) in the Graduate Aptitude Test of Engineering (Govt. of India).

2001-2004	*Institute Merit Prize* (four consecutive years) for best academic record in Aerospace Engg., Indian Institute of Technology, Madras).
1999	*National Scholarships Scheme* (NSS) Award for scoring among the top 0.1% nationwide, All India Senior School Certificate Examinations, Govt. of India
1997-2003	***National Talent Search (NTS) Scholarship*** Award, National Council for Educational Research & Training (NCERT), India.
1997, 1999	*Ranked first* in General Proficiency (highest overall score) in Grade X and XII examinations, Bala Vidya Mandir, Chennai, India.

Journal Publications

1. **Sridharan D**, Ramamurthy DL, Schwarz JS, Knudsen EI. Visuospatial selective attention in chickens. *Proceedings of the National Academy of Sciences,* 111(19): E2056-2065, 2014.
2. **Sridharan D**, Steinmetz NA, Moore T, Knudsen EI. Distinguishing bias from sensitivity effects in multialternative detection tasks. *Journal of Vision (in press)*.
3. **Sridharan D**, Schwarz JS, Knudsen EI. Selective attention in birds. *Current Biology,* 24(11): R510-513, 2014.
4. Schwarz JS*, **Sridharan D***, Knudsen EI. Magnetic tracking of eye position in freely behaving chickens. *Frontiers in Systems Neuroscience*, 7:91, 2013 (*co-corresponding authors).
5. **Sridharan D**, Ramamurthy DL, Knudsen EI. Spatial probability dynamically modulates visual target detection in chickens. *PLoS One*, 8(5):e64136, 2013.
6. Goddard CA*, **Sridharan D***, Huguenard JH, Knudsen EI. Gamma oscillations are generated locally in an attention-related midbrain network. *Neuron,* 73(3):567-80, 2012 (*co-first authors).
7. **Sridharan D**, Boahen K, Knudsen EI. Space coding by gamma oscillations in the barn owl optic tectum. *Journal of Neurophysiology,* 105:2005-2017, 2011 (*Cover article)*.
8. **Sridharan D**, Levitin DJ, Menon V. A critical role for the right fronto-insular cortex in switching between central-executive and default-mode networks. *Proceedings of the National Academy of Sciences*, 105(34):12569-74, 2008.
9. **Sridharan D**, Levitin DJ, Chafe CH, Berger J, Menon V. Neural dynamics of event segmentation in music: Converging evidence for dissociable ventral and dorsal networks. *Neuron*, 55(3):521-32, 2007 *(Cover article)*.
10. **Sridharan D**, Prashanth PS, Chakravarthy VS. The role of the basal ganglia in exploration in a neural model based on reinforcement learning. *International Journal of Neural Systems.* 16(2):111-24, 2006.

Journal Publications (in submission)

11. **Sridharan D**, Knudsen EI. Selective disinhibition: A robust mechanism for effecting target priority by selective attention.
12. **Sridharan D**, Steinmetz NA, Moore T, Knudsen EI. Modeling decisions among multiple alternatives: Bias effects in multialternative detection and attention tasks.

Peer-reviewed conference proceedings and Contributed talks

1. **Sridharan D**, Steinmetz NA, Moore T, Knudsen EI. A unified framework for multiple alternative detection in birds and primates. *Vision Sciences Society* (*VSS*, 12th annual meeting), Naples, USA, 2013. Proceedings: *Journal of Vision,* doi: 10.1167/13.9.629. Peer-reviewed abstract.
2. **Sridharan D**, Knudsen EI. Towards a mechanistic understanding of the role of gamma oscillations in attention: An avian midbrain model. *Society for Neuroscience* (*SfN*, 41st annual meeting), Washington DC, USA, 2011. Nano-symposium on *Functional Mechanisms of Attention by Animal*. Contributed talk.
3. **Sridharan D**, Millner S, Arthur J, Boahen K. Robust spatial working memory through inhibitory gamma synchrony. *Computational and Systems Neuroscience* (*COSYNE*), Salt Lake City, Utah, USA, 2010. Proceedings: *Frontiers in Neuroscience*. doi: 10.3389/conf.fnins.2010.03.00012. Peer-reviewed contributed talk.

   Ranked among top 20 (top 5%) of over 400 submissions and selected for oral presentation.
4. Goddard CA, **Sridharan D**, Huguenard J and Knudsen E. Gamma oscillations in the optic tectum in vitro represent top-down drive by a cholinergic nucleus. *Computational and Systems Neuroscience* (*COSYNE*), Utah, USA, 2010. *Frontiers in Neuroscience*. doi: 10.3389/conf.fnins.2010.03.00082. Peer-reviewed abstract.
5. **Sridharan D*,** Percival B*, Arthur J, Boahen K. An *in-silico* model of dynamic routing through neuronal coherence. *Advances in Neural Information Processing Systems* (*NIPS*), Vancouver, Canada, 2007. Proceedings published in *Advances in Neural Information Processing Systems* 20, D Koller, Y Singer and J Platt Eds., MIT Press, 2008 (*co-first authors). Peer-reviewed full-length paper.

   Ranked among top 100 (top 10%) of around 1000 submissions, and selected for oral spotlight presentation.
6. **Sridharan D**, Levitin DJ, Menon, V. A causal role for the right fronto-insular cortex in switching between executive-control and default-mode networks. *Organization for Human Brain Mapping* (*OHBM*, 13th annual meeting), Chicago USA, 2007. Peer-reviewed contributed talk.

   Ranked among top 65 (top 5%) *of over 1500 submissions and selected for oral presentation.*
7. Kaufman M*, **Sridharan D***, Litchfield J. Action potential backpropagation failure: All-or-none rescue by synaptic input in CA1 obliques. *Computational Neuroscience Meeting* (*CNS*, 15th annual meeting), Edinburgh, UK, 2006 (*co-first authors). Peer-reviewed abstract.

Theses

1. Neural mechanisms of visual and auditory attention. *Doctoral dissertation* submitted to the Program in Neurosciences, Stanford University School of Medicine, Stanford, USA (2011).

2. Willed action and its disorders: A neuroimaging and computational modeling study of the basal ganglia. *Masters thesis* submitted to the Department of Aerospace Engineering, Indian Institute of Technology, Madras, India (2004).

Invited talks (selected)

1. The role of gamma oscillations in sensory coding and selective attention: an avian midbrain model. Invited talk delivered at the *Center for Neurosciences, Indian Institute of Science Education and Research* (IISER), Pune, India on Sep 13, 2013.
2. Decoupling choice bias from perceptual sensitivity: A signal detection approach for multialternative detection and decision-making tasks. Invited talk delivered at the *Center for Neurosciences, Indian Institute of Science* (IISc), Bangalore, India on Sep 11, 2013.
3. Gamma oscillations in the avian optic tectum. Invited talk delivered at the *Bioengineering Forum, Stanford University* on March 31, 2009.
4. fMRI acquisition and analysis: Techniques and tools. Invited talk delivered at the *National Center for Biological Sciences* (NCBS), Bangalore, India on Aug 31, 2007.
5. The neuroscience of music perception explored through functional imaging and computational modeling. Invited talk delivered at the *2nd Annual Stanford Symposium on Music, Rhythm and the Brain* organized by the Stanford Institute for Creativity and the Arts on May 13, 2007.

Teaching Experience

Guest Lecturer. *Large scale neural modeling,* Neural mechanisms of attention (BioE332, Winter), Stanford University, 2009.

Coordinator and Lecturer. *Biocore Explorations,* This is your brain-on-a-chip: Modeling the mini-universe inside your brain (BIO 41, Winter), Stanford University, 2009.

Peer-review Experience

Journal reviewer: Archives of General Psychiatry, Brain, Brain Connectivity, Brain Research, Cerebral Cortex, Frontiers in Neuromorphic Engineering, Neuropsychologia, PLoS One, Scientific Reports (Nature Publishing Group), Proceedings of the National Academy of Sciences.

Grant reviewer: FWF Austrian Science Fund/Der Wissenschaftsfonds (Austria's central funding organization for basic research), British Council: BIRAX (Britain-Israel Researc and Academic Exchange)

Research Interests	Selective attention; Temporal coding; Gamma oscillations; Multi-sensory (visual and auditory) processing; Quantitative psychophysics; Cognitive neuroscience; Neuroimaging (fMRI); Theoretical and computational neuroscience; Large-scale neural modeling.
Other Interests	Languages: Tamil (native), English (fluent), Hindi (fluent), Japanese (intermediate), Sanskrit (intermediate), German (beginner) Comparative linguistics (http://japanese-dravidian.blogspot.com) Ancient Indian civilization and history (http://tattva-jignyasa.blogspot.com)