

SUSHRUT THORAT

CONTACT INFORMATION

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CURRENT INTERESTS

The role of attention and awareness in the brain, and the nature of object-scene interactions in the visual system

EDUCATION

Ph.D. in Cognitive Neuroscience *Ongoing*
Donders Centre for Cognition, Radboud University, The Netherlands
Advisors: Marius Peelen and Marcel van Gerven

M.Sc. in Cognitive Neuroscience *July, 2017*
Center for Mind/Brain Sciences (CIMEC), University of Trento, Italy
GPA: 110/110 (with honors)
[Thesis](#): Using Convolutional Neural Networks to measure the contribution of visual features to the representation of object animacy in the brain
Advisor: Marius Peelen

B.Tech. in Engineering Physics *August, 2015*
Department of Physics, Indian Institute of Technology - Bombay (IIT-B), India
GPA: 7.64/10
[Thesis](#): Quadcopter Flight Control using Modular Spiking Neural Networks
Advisor: Bipin Rajendran

PEER-REVIEWED PUBLICATIONS

Thorat, S., van Gerven, M., and Peelen, M. (2018) The functional role of cue-driven feature-based feedback in object recognition, *Conference on Cognitive Computational Neuroscience (CCN)*, Philadelphia, 2018, pp. 1-4. [\[PDF\]](#)

Thorat, S. and Choudhari, V. (2016) Implementing a Reverse Dictionary, based on word definitions, using a Node-Graph Architecture, *Proceedings of COLING 2016, the 26th International Conference on Computational Linguistics: Technical Papers*, Osaka, 2016, pp. 2797-2806. [\[PDF\]](#)

Thorat, S. and Rajendran, B. (2015) Arithmetic computing via rate coding in neural circuits with spike-triggered adaptive synapses, *International Joint Conference on Neural Networks (IJCNN)*, Killarney, 2015, pp. 1-8. [\[PDF\]](#)

PRE-PRINT PUBLICATIONS

Thorat, S., Proklova, D. and Peelen, M. (2019) The nature of the animacy organization in human ventral temporal cortex, *arXiv preprint*, arXiv:1904.02866. [\[PDF\]](#)

CONFERENCE TALKS/POSTERS

The functional role of cue-driven feature-based feedback in object recognition
(Talk) *Perception Day*, Nijmegen, 2018
(Poster) *Donders Discussions*, Nijmegen, 2018
([Poster](#)) *Conference on Cognitive Computational Neuroscience (CCN)*, Philadelphia, 2018

Using convolutional neural networks to measure the contribution of visual features to the representation of object animacy in the brain
(Poster) *Donders Discussions*, Nijmegen, 2017
(Talk & Poster) *Rovereto Workshop on Concepts, Actions and Objects (CAOs)*, Rovereto, 2017
([Tweets](#)) *Brain Twitter Conference (brainTC)*, 2017

Arithmetic computing via rate coding in neural circuits with spike-triggered adaptive synapses
(Poster) *International Joint Conference on Neural Networks (IJCNN)*, Killarney, 2015

WORKSHOPS ATTENDED	IBRO-SIMONS Computational Neuroscience Imbizo (ISi-CNI)		<i>January, 2017</i>
	Cape Town, South Africa Project : Assessing the role of feature attention in object detection with CNNs. Advisor: Timothy Lillicrap		
	Computational Approaches to Memory and Plasticity (CAMP)		<i>June, 2015</i>
	Bangalore, India Project: The role of the billions of granule cells in the cerebellum.		
OTHER ACHIEVEMENTS	<ul style="list-style-type: none"> • Recipient of the Merit Award (2017), awarded to students who achieve remarkable results at the end of their degree, by the University of Trento, Italy. • Recipient of the Abstract Award, awarded to 5 of the 57 accepted abstracts at the Rovereto Workshop on Concepts, Actions and Objects (2017). • Ranked 721 among 450,000 students in the Joint Entrance Examination (JEE, 2011) conducted towards admission to the Indian Institute of Technology (IIT). • Recipient of the KVPY scholarship (2009), awarded to 215 students across India with talent and aptitude for research, by the Dept. of Science & Technology, Govt. of India. • Winner at the Annual All India Web-Design Contest (2008) hosted by SJIT, Pune (India). • Recipient of the NTSE scholarship (2007), awarded to 1000 students across India with high intellect and academic talent, by the National Centre for Educational Research and Technology, Govt. of India. 		
TECHNICAL SKILLS	Programming: Python (TensorFlow), MATLAB (PsychToolbox, MatConvNet, SPM) Neuro-Imaging: fMRI (MVPA)		
TEACHING EXPERIENCE	• Guest Lecturer - Academic Skills 2 (research methods; UG course)	<i>Radboud University, 2019</i>	
	• Teaching Assistant - Neural Networks (UG course)	<i>Radboud University, 2019</i>	
	• Teaching Assistant - Advanced Academic & Professional Skills (writing/reviewing research reports; Masters course)	<i>Radboud University, 2019</i>	
	• Supervisor - Research Project 3 (3 students; UG thesis project)	<i>Radboud University, 2018</i>	
	• Co-supervisor - Research Project 3 (4 students; UG thesis project)	<i>Radboud University, 2018</i>	
	• Guest Lecturer - Academic Skills 2 (research methods; UG course)	<i>Radboud University, 2018</i>	
	• Teaching Assistant - Brain for AI (UG course)	<i>Radboud University, 2018</i>	
WORK EXPERIENCE	General Secretary		
	Undergraduate division - Department of Physics, IIT Bombay		<i>2014-15</i>
	Content Developer		
	Avanti Fellows, Delhi		<i>Summer 2013</i>
OTHER REPORTS	• The functional relevance of neuronal clustering [PDF]		<i>2016</i>
	• Understanding human visual processing with deep neural networks [PDF]		<i>2016</i>
	• Predisposition to towards-gravity periodic motion in chicks [PDF]		<i>2015</i>
	• Gesture Lock [PDF]		<i>2013</i>