BRAIN, COMPUTATION AND LEARNING

January 9–13, 2017

Faculty Hall, Indian Institute of Science, Bangalore

Monday 9 January 2017

08:00–08:45 **Registration**

08:45–09:00 **Inauguration**

09:00–09:30 **Kris Gopalakrishnan**
Chairman, Axilor Ventures; Co Founder, Infosys
Pratiksha Trust, Bangalore, India
Workshop Introduction

Session 1: Neural Circuits I

9:30–10:30 **Upinder Bhalla**
National Centre for Biological Sciences, Bangalore
Hearing A Tune: How Single Neurons May Discriminate Complex Spatiotemporal Patterns Of Synaptic Input

10:30–11:00 **Coffee Break**

11:00–12:00 **Sridharan Devarajan**
Indian Institute of Science, Bangalore
Subcortical Control Of Attention: Circuits And Mechanisms

12:00–13:00 **Christoph Schreiner**
University of California, San Francisco
Cortical Processing of Signals in Noise: From Neurons to Filters to Behavior

13:00–14:30 **Lunch Break**

BRAIN, COMPUTATION AND LEARNING

January 9–13, 2017

Faculty Hall, Indian Institute of Science, Bangalore

Monday 9 January 2017

Session 2: Big Data Analytics

14:30–15:30 **Vasant Honavar**
The Pennsylvania State University, University Park
TBD

15:30–16:30 **Hynek Hermansky**
Johns Hopkins University, Baltimore
Speech For An Auditory Cortex

16:30–17:00 **Coffee Break**

17:00–18:00 **Arnab Bhattacharyya**
Indian Institute of Science, Bangalore
The Dictionary Testing Problem

Tuesday 10 January 2017

Session 3: Deep Learning I

9:00–10:00 **Stéphane Mallat**
École Polytechnique, Palaiseau
10:00–11:00 Understanding (Or Not) Deep Neural Networks

11:00–11:30 **Coffee Break**

11:30–12:30 **Stéphane Mallat**
École Polytechnique, Palaiseau
Understanding (Or Not) Deep Neural Networks

12:30–14:00 **Lunch Break**

BRAIN, COMPUTATION AND LEARNING

January 9–13, 2017

Faculty Hall, Indian Institute of Science, Bangalore

Tuesday 10 January 2017

Session 4: Learning Theory

14:00–15:00 **Maneesh Sahani**
University College London
Convergent Neural And Machine Inference And Learning With Distributed Distributional Representations

15:00–16:00 **Partha Talukdar**
Indian Institute of Science, Bangalore
Interpretable Representation Learning from Brain and Corpus

16:00–16:30 **Coffee Break**

16:30–17:30 **Rishikesh Narayanan**
Indian Institute of Science, Bangalore
Holistic Learning In Biological Neurons

17:30–18:00 **Wrap up discussions for the day!**

Wednesday 11 January 2017

Session 5: Perception and Action

9:00–10:00 **Shihab Shamma**
The University of Maryland, College Park
Cortical Analysis Of Complex Sensory Scenes

10:00–11:00 **Pratik Mutha**
Indian Institute of Technology, Gandhi Nagar
A Common Neural Process Mediates Motor Learning Across Effectors

11:00–11:30 **Coffee Break**

11:30–12:30 **S.P. Arun**
Indian Institute of Science, Bangalore
Cracking The Code For Visual Objects

12:30–14:00 **Lunch Break**

BRAIN, COMPUTATION AND LEARNING

January 9–13, 2017

Faculty Hall, Indian Institute of Science, Bangalore

Wednesday 11 January 2017

Session 6: Deep Learning II

14:00–15:00 **Balaraman Ravindran**
Indian Institute of Technology, Madras
Learning Structured Policies with Deep Reinforcement Learning

15:00–16:00 **C.V. Jawahar**
IIIT, Hyderabad
Deep Learning and Image Representations

16:00–16:30 **Coffee Break**

16:30–17:30 **Venkatesh Babu**
Indian Institute of Science, Bangalore
Visual Explanations from Deep Nets

17:30–18:00 **Wrap up discussions for the day!**

Thursday 12 January 2017

Session 7: Neural Circuits II

9:00–10:00 **Patrick Kanold**
University of Maryland, College Park
Population Analysis Of The Dynamics Of Sound Processing In The Auditory Cortex

10:00–11:00 **Srdjan Ostojic**
École Normale Supérieure, Paris
From Dynamics To Computations In Randomly-Connected Recurrent Networks

11:00–11:30 **Coffee Break**

11:30–12:30 **Sujit Sikdar**
Indian Institute of Science, Bangalore
Neural Circuits In The Hippocampal Brain Slice And Randomly Interconnected Hippocampal Neurons On A Chip

12:30–14:00 **Lunch Break**

BRAIN, COMPUTATION AND LEARNING

January 9–13, 2017

Faculty Hall, Indian Institute of Science, Bangalore

Thursday 12 January 2017

Session 8: Neural Acoustic Processing/Deep Learning

14:00–15:00 **Yves Boubenec**
École Normale Supérieure, Paris
Task Engagement Induces Shift From Sensory To Behavioral Representations In Primary Auditory Cortex

15:00–16:00 **Chandra Sekhar Seelamantula**
Indian Institute of Science, Bangalore
Deep Learning Meets Sparse Coding

16:00–16:30 **Coffee Break**

16:30–17:30 **Ambedkar Dukkipati**
Indian Institute of Science, Bangalore
Detecting Communities In Networks Using Spectral Graph Methods

17:30–18:00 **Wrap up discussions for the day!**

Friday 13 January 2017

Session 9: Neural Circuits and Processing

9:00–10:00 **Nima Mesgarani**
Columbia University, New York

10:00–11:00 Reverse Engineering The Neural Mechanisms Involved In Robust Speech Processing

11:00–11:30 **Coffee Break**

11:30–12:30 **Nima Mesgarani**
Columbia University, New York
Reverse Engineering The Neural Mechanisms Involved In Robust Speech Processing

12:30–13:30 **Mriganka Sur**
Massachusetts Institute of Technology, Cambridge
Brain Circuits And Dynamics Underlying Cognition

13:30–14:30 **Lunch!**