

Scientific Schedule / Last update 03-12-2018

DAY 1 – Dec 9th K-500 Amphitheater – Pavillon Roger Gaudry – Université de Montréal

8:30 Opening day 1 - A word from organizers and sponsors

8:45 Dr Danilo Bzdok (Aachen University, Germany) "Statistics wars in imaging neuroscience: classical inference vs. pattern generalization"

9:30 Dr Pamela Douglas (UCLA) "Building Brain Computational Models"

10:15 Pause

10:35 Special Announcements

10:45 Dr Irina Rish (IBM Watson Research, NY, USA) "Modeling Brain Dynamics: van der Pol, LSTMs and beyond"

11:30 Keynote 1: Dr Yves Fregnac (CNRS, Paris) "From Big-data driven simulation of the Brain and artificial intelligence to the myth of transhumanism"

12:30 Lunch

13:30 Brief student presentations (Selected from the abstract submissions)

14:30 Dr Ben D. Huh (MIT-IBM Watson AI Lab, Cambridge, MA, USA) "Exploring the space of spike-based computations"

15:15 Dr Dan Yamins (NeuroAILab, Stanford Neurosciences Institute, CA, USA) "Cognitively Inspired Artificial Intelligence for Neuroscience"

16:15 Keynote 2: Dr Yoshua Bengio (Mila/UdeM) "Inspiration from Brains for Deep Learning and Inspiration from Deep Learning for Brains"

17:15 Round table discussion/debate

17:45 MAIN Cocktails + Posters

DAY 2 – Dec 10th K-500 Amphitheater – Pavillon Roger Gaudry – Université de Montréal

8:30 Opening day 2 - A word from organizers and sponsors

8:45 Dr Pascal Vincent (Mila/Facebook/UdeM) "Introduction to Deep Learning"

9:30 Dr Blake Richards (Toronto) "A deep learning recipe for neuroscience"

10:15 Pause

10:35 Special Announcements

10:45 Dr Michael Mozer (Univ Boulder Colorado, USA) - "The role of access consciousness in humans and machines"

11:30 Keynote 3: Dr Tatyana Sharpee (Salk Institute for Biological Studies, San Diego) "Elements of cortical computation that enhance robustness of object recognition"

12:30 Lunch

13:30 Dr Sebastian Stober (Artificial Intelligence Lab, University Magdeburg) "Bridging Deep Learning & Cognitive Neuroscience - From Method Transfer to Hybrid Modeling"

14:30 Dr Alexandre Gramfort (INRIA, Université Paris Saclay, France) "Learning representations from neural signals"

15:15 Keynote 4: Dr Doina Precup (Mila/McGill/DeepMind) "Hierarchical Reinforcement Learning in computers and brains"

16:15 Student prizes

20:00 MAIN Party Time (Eastern Bloc Gallery- 7240 Rue Clark, Montréal - Details TBA soon!)

[See MAIN website for information regarding the program for the hands-on training days – Dec 11th & 12th]

Session d'affiches (9 décembre. 17h45) / Poster Session (December 9, 17:45)

- 1- Golnoush Alamian (Université de Montréal)
"New leads on temporal dysconnectivity among Schizophrenia patients: a source-level resting-state MEG and machine-learning study"
- 2- Maxine Arcand-Lavigne (Université de Montréal)
"Data-mining sleep brain signals using machine-learning: Exploring the effect of caffeine on EEG network dynamics"
- 3- Mohamed Bahdine (Université Laval)
"Functional Inference of Real Neural Networks: A comparison of expert-models and deep learning approaches"
- 4- Hansenclever Bassani (Universidade Federal de Pernambuco)
"A Biologically Inspired Neurocomputational Model for Word-Referent Associations"
- 5- Loubna Berrada (Université de Montréal)
"Application of Machine-Learning Methods for identification of markers of dementia in Parkinson's Disease"
- 6- Anthony Bilodeau (Université Laval)
"A deep learning approach to study the reorganization of neuronal proteins"
- 7- Marco Bonizzato (Université de Montréal)
"Intelligent neuroprosthetics to control walking after spinal cord injury"
- 8- Olga Bukhtiyarova (Université Laval)
"Area-specific properties of sleep oscillations detected with machine learning methods"
- 9- Arthur Dehgan (Université de Montréal)
"Machine Learning and Riemannian Geometry: A study on dream recall rates"
- 10- Laura Gagliano (Polytechnique Montréal)
"Comparing MLP and LSTM Neural Networks for Seizure Prediction based on Bispectrum Analysis"
- 11- Julie Gonneaud (McGill University)
"The preclinical phase of autosomal dominant Alzheimer's disease is characterized by accelerated brain aging"
- 12- Vanessa Hadid (Université de Montréal)
"Classification of the Seen and the Unseen, Source reconstruction and Oscillations: A MEG study on blindsight"
- 13- Yann Harel (Université de Montréal)
"Comparison of classical and Riemannian classifications of sub-clinical social anxiety levels using EEG oscillations induced by face perception"
- 14- Anibal Solon Heinsfeld (Child Mind Institute)
"Towards sparse hierarchical graph classifiers for autism spectrum disorder identification"
- 15- Tyler Jackson (University of Waterloo)
"Learning in Energy Networks by Minimizing Network Strain"
- 16- Mainak Jas (Université de Montréal)
"Learning the morphology of brain signals with convolutional dictionary learning"
- 17- Ahmed Khan (University of Waterloo & McGill University)
"Bidirectional Learning in Recurrent Neural Networks Using Equilibrium Propagation"
- 18- Tarek Lajnef (Université de Montréal)
"Fractal Dreams: Exploring differences in EEG signal scaling properties in individuals with high versus low dream recall"
- 19- Louis Leconte (Université de Montréal)
"Classification and transfer learning across states of consciousness: Exploring multifractal properties of EEG in sleep and under anesthesia"
- 20- Melanie Lubrano di Scandalea (Polytechnique Montréal)

- 21- Kelvin Mok (McGill University)
"Deep Active Learning for Myelin Segmentation on Histology Data"
"Super-resolution using generative adversarial networks for image interpolation of brain histology volumes"
- 22- Anne Monnier (Université de Montréal)
"Extracting connectomes from EEG signals during a visual attention task"
- 23- Andre Ofner (University of Potsdam)
"Hybrid active inference"
- 24- Subba Reddy Oota (IIIT Hyderabad)
"Mixture of Regression Experts in fMRI Encoding"
- 25- Ricardo Pizarro (McGill University)
Using deep-learning algorithms for automatic quality control of brain MRI"
- 26- Luke Prince (University of Toronto Scarborough)
"Non-linear factor analysis of calcium fluorescence data with sequential autoencoders"
- 27- Maximilian Puelma Touzel (Université de Montréal)
"Downstream neurons that learn high-dimensional features in spiking circuit activity can transfer the ..."
- 28- Maxime Radmacher (Université de Montréal)
"Exploring reciprocal social interactions in Autism using Artificial Intelligence: meta-Bayesian models"
- 29- Yannick Roy (Université de Montréal)
"Deep learning-based EEG analysis: A review of trends from 2010 to 2018"
- 30- Mehraveh Salehi (Yale University)
"There is no single functional atlas even for a single individual: Parcellation of the human brain is state dependent"
- 31- David St-Amand (McGill University)
"Inferring inputs to visual cortex neurons using CNNs"
- 32- Thomas Thiery (Université de Montréal)
"Decoding the neural dynamics of oculomotor decision making in humans : A data-driven iEEG study"
- 33- Jessica Thompson (Université de Montréal)
"Towards a common philosophy of explanation for artificial and biological intelligence"
- 34- Abel Torres Montoya (DATAVERAS)
"Computational Principles of Intelligence"
- 35- Eszter Vertes (UCL)
"Flexible and accurate inference and learning in deep generative models"
- 36- Theresa Wiesner (Université Laval)
"Intelligent STED nanoscopy to study synaptic plasticity: online optimization of multiobjective, multiparameter and multimodal live cell STED imaging"
- 37- Mingli Zhang (McGill University)
"Brain Status Prediction with Non-negative Projective Dictionary Learning"
- 38- Mingli Zhang (McGill University)
"Brain Development Modeling and Exploring with Two-layer Linear Neural Network"