Schedule WANDA 2019

Sunday August 25

7-7.30pm  Welcome session (informal, optional)

Monday August 26 - Calcium imaging, whole-brain imaging, pros and cons of linear models

8-8.30am  Breakfast
8:30-9am  Introduction
9-9:30am  Talk: Yi-Yun Ho, Ventromedial prefrontal parvalbumin neurons signal active avoidance
9:30-10am Talk: Gilles Vanwalleghehm, Whole-brain analysis of water-flow responses in larval zebrafish
10-10:20am break
10:20-11:35am Tutorial: Yi-Yun Ho, Isolate calcium responses to individual behavioral event
11:35-12am break
12:00am-1.15pm Tutorial: Gilles Vanwalleghehm, Whole-brain analysis of larval zebrafish neural data
1.15-2.30pm lunch
2.30-3pm  Talk: Christina Buetfering, Decision coding in layer 2/3 neurons in primary somatosensory cortex
3-3.30pm  Talk: Simon Musall, Single-trial neural dynamics, movements
3.30-4pm  Break
4-5:15pm  Tutorial: Christina Buetfering, Power and limitations of GLMs
5:15-5:45pm Break
5:45-7pm  Tutorial: Simon Musall, Linear regression models to link large-scale neural activity to rich behavior
7-7.30pm  break
7.30-9pm  dinner

Tuesday August 27 - Models for population activity patterns (dynamic and static)

8-8.30am  Breakfast
8:30-9am  Talk: Carsen Stringer, Rastermap: a scale-free embedding algorithm for neural population recordings.
9-9:30am  Talk: Lea Duncker, Inferring interpretable nonlinear stochastic dynamics from population spike trains.
9:30-10:00am break
10:00-11:15am Tutorial: Carsen Stringer, What happens in visual cortex during image presentations?
11:15-11:45am break
11:45am-1pm Tutorial: Lea Duncker, Hierarchical Gaussian Process models for population data
1:00-2:30pm  Lunch
2:30-3pm  Lightning Talk by Columbia faculty I (Nima Mesgarani, PhD)
3-3:30pm  Talk: Emily L. Mackevicius, Unsupervised discovery of temporal sequences in high-dimensional datasets.
Wednesday August 28 - Models for behavior, relate to neurons

8-8.30am Breakfast
8:30am-9am Talk: Diego Vidaurre, Characterising the temporal dynamics of stimulus processing through unconstrained decoding
9am-9:30am Talk: Zhengwei Wu, Inverse POMDP: I can see what you think from what you do
9:30-10:00am break
10-11:15am Tutorial 9: Diego Vidaurre, HMM for neural time series
11:15-11:45am break
11:45am-1pm Tutorial 10: Zhengwei Wu, Inferring latent state in the hidden Markov model
1-2.30pm lunch
2:30-3pm Talk: Alon Rubin, Revealing neural correlates of behavior without behavioral measurements
3-3:30pm Talk: Mar Yebra, evidence accumulation in memory-based decisions
3:30-4pm Break
4-5:15pm Tutorial: Alon Rubin, Internal structure of high dimensional data
5:15-5:45pm Break
5:45-7pm Tutorial: Mar Yebra, behavior and single unit activity in humans.
7-7:30pm break
7.30-9pm dinner

Thursday August 29 - Methods to identify network structure

8-8.30am Breakfast
8:30am-9am Talk: Ann Sizemore Blevins, Uncovering the topology of the human connectome
9am-9:30am Talk: Erik Hermansen, Neural Decoding using Topological Data Analysis.
9:30-10am break
10-11:15am Tutorial: Ann Sizemore Blevins, Using topology to determine the shape of data.
11:15-11:45am break
11:45am-1pm Tutorial: Erik Hermansen, Persistent (co)Homology and Circular Coordinates in Neural Data
1pm-2:30pm Lunch
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>2.30-3pm</td>
<td>Talk: Giuseppe Vinci, Functional connectivity graph estimation from non-simultaneous recordings</td>
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<td>3-3.15pm</td>
<td>break</td>
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<tr>
<td>3.15-4.30pm</td>
<td>Tutorial: Giuseppe Vinci, Functional connectivity graph estimation from massive datasets</td>
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<td>4.30-5pm</td>
<td>break</td>
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<td>5-6.30pm</td>
<td>Code challenge</td>
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<td>6.30-7pm</td>
<td>Wrap up session</td>
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