

Workshop on Causality and Information Flow within Complex Systems

Thursday, July 26, 2018

Time	Presenter	Title
Chairs: E. Bollt, J. Sun		
14:00-14:20	Erik Bollt and Jie Sun bolltem@clarkson.edu sunj@clarkson.edu	Identifying the Coupling Structure in Complex Systems through the Optimal Causation Entropy Principle, Information Flow and System Identification
14:20-14:40	Jie Sun and Erik Bollt sunj@clarkson.edu bolltem@clarkson.edu	Entropic Learning of Boolean Networks and Functions from Data
1:40-15:00	James P. Bagrow and Lewis Mitchell james.bagrow@uvm.edu lewis.mitchell@adelaide.edu.au	Information flow reveals prediction limits in online social activity
15:00-15:20	X. San Liang sanliang@courant.nyu.edu	The cause-effect relation and information flow between time series
Coffee break		
Chairs: X.S. Liang, J. Amigo		

15:40-16:00	<p>Jose Amigo and Yoshito Hirata jm.amigo@umh.es hirata@mist.i.u-tokyo.ac.jp</p>	<p>Detecting directional couplings when there may be a common hidden driver: The joint distance distribution</p>
16:00-16:20	<p>Shawn Pethel and Daniel Hahs shawn.d.pethel.civ@mail.mil daniel.w.hahs.ctr@mail.mil</p>	<p>Testing the Significance of Transfer Entropy</p>
16:20-16:40	<p>Ryan James, Bahti Zakirov, Blanca Daniella Masante Ayala, and James Crutchfield rgjames@ucdavis.edu bahtizakirov@gmail.com masante@ucdavis.edu chaos@cse.ucdavis.edu</p>	<p>Modes of information flow</p>
16:40-17:00	<p>Joseph Lizier joseph.lizier@sydney.edu.au</p>	<p>A Critique of A Critique of Transfer Entropies. Or: Untangling concepts of information transfer, storage, causality, unique and synergistic effects</p>
Dinner		
<p>Chairs: S. Pethel, R. James</p>		
18:00-18:20	<p>Javier Orlandi, Paul Herringer and Joern Davidse javiergorlandi@gmail.com jdavidse@ucalgary.ca</p>	<p>Network inference in neuroscience with Causal Deep Learning</p>

18:20-18:40	Hiroshi Ashikaga, Konstantinos Aronis, Susumu Tao and Ryan James hashika1@jhmi.edu karonis1@jhmi.edu stao5@jhmi.edu rgjames@ucdavis.edu	Causal Scale Shift in Order-Disorder Phase Transition of Human Heart Rhythm
18:40-19:00	T. Martin Smyth, Debra Sabatini-Dwyer, Jaso Jones, Joseph Finn martin.smyth@stonybrook.edu debra.dwyer@stonybrook.edu Jason.J.Jones@stonybrook.edu jafinn@andrew.cmu.edu	Rapid Information Flows and Emergent Political Phenomena: a Complex Systems Theoretic Approach
19:00-19:20	Brennan Klein and Erik Hoel brennanjamesklein@gmail.com il.com hoelerik@gmail.com	Quantifying Causal Structure and Causal Emergence in Networks
Coffee Break		
Chairs: J. Lizier, J.P. Bagrow		
19:40-20:00	Ulf Aslak, Martin Rosvall, Sune Lehmann ulfaslak@gmail.com martin@email.edu sljo@dtu.dk	Constrained information flows in temporal networks reveal intermittent communities

20:20-20:40	Asmeret Naugle, Kiran Lakkaraju, Stephen Verzi, Laura Swiler, Vicente Romero, and Michael Bernard abier@sandia.gov klakkar@sandia.gov sjverzi@sandia.gov lpswile@sandia.gov vjromer@sandia.gov mlberna@sandia.gov	A multi-tiered complexity metric
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