

Artemy Kolchinsky

Santa Fe Institute
1399 Hyde Park Rd.
Santa Fe, NM 87501

Contact Information

E-mail: artemyk@gmail.com
WWW: <https://sites.google.com/site/artemyk/>
GitHub: <https://github.com/artemyk/>

Education

Indiana University, Bloomington, IN, May 2015
Ph.D. in Informatics (focus in Complex Systems), Minor in Cognitive Science
Thesis: “Measuring Scales: Integration and Modularity in Complex Systems”
Committee: Luis M. Rocha (chair), Yong-Yeol Ahn, Randall Beer, Alessandro Flammini, Olaf Sporns

New York University, New York, NY, August 2007
B.A. Magna Cum Laude, Individualized Study (concentration in Complex Systems Theory)

Academic Positions

Santa Fe Institute, Santa Fe, New Mexico, Dec 2015-Present
Postdoctoral fellow

Instituto Gulbenkian de Ciência, Oeiras, Portugal, 2009-2010
Visiting researcher at FLAD Computational Biology Collaboratorium

Research

Peer-Reviewed Publications

- **Kolchinsky, A.**, Gates, A.J., Rocha, L.M., “Modularity and the Spread of Perturbations in Complex Dynamical Systems,” *Physical Review E*, *accepted*. [pdf](#) [code](#)
- **Kolchinsky, A.**, Lourenço, A., Wu, H., Li, L., Rocha, L.M., “Extraction of Pharmacokinetic Evidence of Drug-drug Interactions from the literature,” *PLOS One*, 2015. [pdf](#)
- **Kolchinsky, A.**, van den Heuvel, M.P., Griffa, A., Hagmann, P., Rocha, L.M., Sporns, O., Goñi, J., “Multi-scale Integration and Predictability in Resting State Brain Activity,” *Frontiers in Neuroinformatics*, 2014. [pdf](#)
- Rossi, A., Parada, F.J., **Kolchinsky, A.**, Puce, A., “Neural correlates of apparent motion perception of impoverished facial stimuli I: A comparison of ERP and ERSP activity,” *NeuroImage*, 2014. [link](#)
- **Kolchinsky, A.**, Lourenço, A., Li, L., Rocha, L.M., “Evaluation of linear classifiers on articles containing pharmacokinetic evidence of drug-drug interactions,” *Proc of Pacific Symposium on Biocomputing*, 2013. [pdf](#)
- **Kolchinsky, A.** and Rocha, L.M., “Prediction and modularity in dynamical systems,” *Proc of European Conf. on the Synthesis and Simulation of Living Systems (ECAL)*, 2011. [pdf](#)
- **Kolchinsky, A.**, Abi-Haidar, A., Kaur, J., Hamed, A.A., Rocha, L.M., “Classification of protein-protein interaction full-text documents using text and citation network features,” *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 7(3), 2010.

Oral Presentations

- **Kolchinsky, A.**, “Complexity Measures for Spatially Embedded Systems,” *Information Theory, Ecosystems, and Schrodinger’s Paradox at Santa Fe Institute* (Santa Fe, NM), 10/2015.

- **Kolchinsky, A.**, Gates, A.J., Rocha, L.M., “Modularity and the Spread of Perturbations in Complex Dynamical Systems,” *Conference on Complex Systems 2015* (Tempe, AZ), 9/2015 (winner of award from “Young Researchers Network on Complex Systems”).
- **Kolchinsky, A.** and Rocha, L.M., “Modularity and dynamical timescales in Boolean Networks,” Guided Self-Organization 6 workshop, *European Conference on Complex Systems 2013* (Barcelona, Spain), 9/2013.
- **Kolchinsky, A.**, Lourenço, A., Li, L., Rocha, L.M., “Evaluation of linear classifiers on articles containing pharmacokinetic evidence of drug-drug interactions,” *Pacific Symposium Biocomputing 2013* (Big Island, Hawaii), 1/2013.
- Goñi, J., **Kolchinsky, A.**, van den Heuvel, M.P., Griffa, A., Rocha, L.M., Sporns, O., “Information, space and structure in the human brain resting state,” *12th Granada Seminar on Computational and Statistical Physics* (La Herradura, Spain), 9/2012. [presented by Goñi, J.]
- **Kolchinsky, A.**, “Prediction and modularity in dynamical systems,” *Network Frontier Workshop* (Evanston, IL), 12/2011.
- Parada, F.J., **Kolchinsky, A.**, Rossi, A., Busey, T., Sporns, O., Puce, A., “Spatial organization of EEG cross-frequency coupling in a perceptual task,” Symposium on “Human visual perception”, *Society for Neuroscience* (Washington, DC), 11/2011. [presented by Parada, F.J.]
- **Kolchinsky, A.**, “The Umwelt, artificial life, and evolution”, Symposium on “Perception, Sensation, Information, and Ecology - Taking the animal’s point of view,” *CISAB Animal Behavior Conference* (Bloomington, IN), 4/2011.
- **Kolchinsky, A.**, “Identifying Dynamical Modules in Boolean Network Models,” *3rd International Workshop on Guided Self-Organization* (Bloomington, IN), 9/2010.
- **Kolchinsky, A.**, “The Expanded Mind: Mental Expansion and the Intentional Stance,” *University of Toronto Interdisciplinary Symposium on the Mind* (Toronto, ON), 3/2008.

Posters

- **Kolchinsky, A.**, van den Heuvel, M.P., Griffa, A., Hagmann, P., Rocha, L.M., Sporns, O., Goñi, J., “Information, space & structure in the human brain resting state,” *Indiana Neuroimaging Symposium* (Bloomington, IN), 2013.
- Parada, F.J., **Kolchinsky, A.**, Rossi, Puce, A. “EEG phase-coupling dynamics in apparent motion perception,” *Organization for Human Brain Mapping 2013* (Seattle, WA), 2013.
- **Kolchinsky, A.**, Parada, F.J., Rocha, L.M., Busey, T., “Studying Differences in Oscillatory Synchronization with Tensor-Factorization,” *MBI Rhythms and Oscillations Workshop* (Columbus, OH), 2013.
- Parada, F.J., **Kolchinsky, A.**, Rossi, A., Busey, T., Sporns, O., Puce, A. “From Visual Awareness to Perceptual Decision-Making: neural correlates of top-down and bottom-up dynamics,” *MBI Rhythms and Oscillations Workshop* (Columbus, OH), 2013.
- Rossi, A., Parada, F.J., **Kolchinsky, A.**, Puce, A. “Neural responses to changes in social attention depicted by biological motion stimuli,” *Organization for Human Brain Mapping 2012* (Beijing, China), 2012.

Professional Experience

- **Research assistant**, NIH-funded project on text mining biomedical literature in PubMed. Indiana University, Bloomington, IN. Supervisor: Luis M. Rocha. 2014-2015
- **Data Science intern**, LinkedIn Corporation, Mountain View, CA. Supervisor: Mathieu Bastian. Summer 2014
- **Research assistant**, Project for exploring collaborative filtering methods for large-scale job recommendation. Indiana University, Bloomington, IN. Supervisor: Luis M. Rocha. 2012-2013

- **Research assistant**, Indiana University-funded project on discovering drug-drug interactions by text mining biomedical literature. Indiana University, Bloomington, IN. Supervisor: Luis M. Rocha. 2011-2012
- **Freelance programmer**, Developed a variety of database-backed web applications. 1998-2007.

Service & Teaching

Teaching

Indiana University, Bloomington, IN

- Teaching assistant for “I400 Large-scale Social Phenomena” [\[link\]](#), Spring 2014
- Teaching assistant for “I201 Math and logic foundations of Informatics”, Spring 2011
- Teaching assistant for “I485 Biologically Inspired Computing” [\[link\]](#), Fall 2010
- Teaching assistant for “I210 Information Infrastructure” (Python programming), Fall 2008-Spring 2009

Other

- Teaching assistant in week-long “Bayesian brain” educational module, Instituto Gulbenkian de Ciência, Oeiras, Portugal, Spring 2010

Academic service

- Started and helped organize “Apophenia” discussion group on complexity, dynamical systems, and embodiment in cognitive science, Indiana University, Bloomington, IN, 2008-2013 [link](#)
- Co-organized discussion group about Friston’s “Free energy principle”, Instituto Gulbenkian de Ciencia, Oeiras, Portugal, Spring 2010
- Volunteer organizer for Society for Psychology and Philosophy Conference, Indiana University, Bloomington, IN, 6/2009
- Reviewer: *Entropy*.

Awards & Fellowships

- Affiliate of IGERT training program in “Dynamics of brain-body-environment interaction in behavior and cognition”, 2010-2015
- Lilly Graduate Fellowship, Biocomplexity Institute, Indiana University, Bloomington, IN, 2012-2013
- Eli Lilly Fellowship, Indiana University, Bloomington, IN, 2007-2009
- Dean’s List Gallatin School, New York University, NY, 2004.

Miscellaneous

Languages

Fluency: English, Russian, Spanish / Basic: Portuguese

Technical Skills

Machine learning, multivariate statistical analysis, network analysis, information theory

Computer Skills

Scientific programming (Python, MATLAB, C, C++, R, Java)

Web programming (HTML, JavaScript, XML, ASP, PHP)

Database (MS SQL Server, MySQL, PostgreSQL)

Scalable computing (Hadoop, PIG, Scala)