Vincent Wong

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Employment

Researcher, New England Complex Systems Institute (NECSI) **June 2014 – June 2017**

- Developing models and simulations
- Producing figures and visualizations
- Writing and editing papers
- Managing and analyzing data
- IT and hardware management
- Supervising at NECSI courses

Education

Bachelor of Arts in Complex Systems, Brandeis University, Waltham, MA **May 2014**

The degree comprises advanced theoretical and computational work across physics, neuroscience, and economics, with a focus on the computational modeling of agent-based behavior in dynamical systems.

Graduate-level courses:

- Biological Physics
- Computational Neuroscience
- Independent Study in Dynamical Social Systems
- Game Theory
- Principles of Neuroscience
- Statistical Machine Learning
- Systems Neuroscience
- Thermodynamics and Statistical Mechanics

Undergraduate-level courses:

- Data Structures and Functions
- Differential Equations
- Discrete Structures
- The Global Economy
- Intro to Thermo. and Statistical Mechanics
- Psych Statistics

Technical Skills

Python, MongoDB, Processing, D3, Unix, Matlab, Java, C, Weka, R, Unity

Research

Publications

Wong V, Cooney D, Bar-Yam Y. Beyond Contact Tracing: Community-Based Early Detection for Ebola Response. *PLOS Currents Outbreaks*. 2016 May 19. Edition 1. doi: 10.1371/currents.outbreaks.322427f4c3cc2b9c1a5b3395e7d20894

Wong V, Bar-Yam Y. How Do People Differ? A Social Media Approach. Submitted for publication http://www.necsi.edu/research/networks/personality

Projects

Synchronization in Venezuelan Protests of 2014—Found hallmarks of synchronicity in social behavior by analyzing hashtag usage, using protests in Venezuela as a case study (Co-author)

Senior Thesis (Honors):

Application of Random Field Ising Model of Magnets to Financial Data, Fall 2013 to Spring 2014—Found distribution patterns between avalanche data (number of spin flips per time step) and time series of high-frequency financial returns

- Coded in Matlab, adapted model with processes for qualitatively comparable mapping

Research Poster Project:

Tracer Particle Behavior in Simulated Mesh, Summer 2013—Pseudo-random motion of particle was simulated in static mesh, applying distribution results to dynamic network of microtubules with kinesin

- Coded in Matlab, adapted original model of particle motion, ran trials to generate comparison data
- Presented poster at Brandeis' Summer Undergraduate Poster Session of Summer 2013

Other Activities

Co-Director of 'Epithelium' (Bernstein Festival of the Arts 2013) and 'The Maw' (Bernstein Festival of the Arts 2014): Project design, Geodesic dome construction, project construction, grant application

Stage manager/Composer/Performer in Undergraduate Composers' Collective Fall 2013 and Spring 2014 concerts

Performance pianist (Keyboard parts 1 and 2) for 'I Love You Because,' a musical hosted by the Brandeis theatre group Tympanium Euphorium

Founding member of Music Composition Club at Brandeis: writing the constitution, organizing meeting content