Daniel C. L. Johnson

DanCLJohnson@gmail.com — (585) 690-2073

EDUCATION

Brown University, Providence, RI
Ph.D., Applied Mathematics, expected December 2014
Sc.M., Applied Mathematics, May 2012

Rensselaer Polytechnic Institute, Troy, NY
B.S., magna cum laude, Mathematics, May 2009

RESEARCH EXPERIENCE

Dissertation Research, Brown University, July 2012 – Present

- Examined self-assembly processes using geometric models and Markov methods.
- Synthesized information from publications across many different disciplines, including computational chemistry, Bayesian statistics, and nanotechnology.
- Developed Python modules, implementing algorithms from a variety of fields.
- Visualized computational results to demonstrate research findings.

Kobe-Brown Summer Simulation School, Kobe, Japan, August 2013

- Collaborated on computing project with Kobe University students.
- Created 3D visualizations for CAVE environments using ParaView.

PROFESSIONAL EXPERIENCE

Statistical Consultant, Pleio Health Support Systems, July 2012 – Present

- Developed Python code to parse, clean, and analyze data from over 200,000 prescription records.
- Reduced prediction intervals for estimating yield rates of company programs by 46% using a Bayesian generative model.
- Authored report on sampling bias in Pleio trial groups, won Bronze Medal for abstracts at Academy of Managed Care 26th Annual Meeting.
- Validated statistical methodology used by Pleio for marketing purposes.

COMPUTING SKILLS

Languages: Python (with NumPy, SciPy, and matplotlib), C++, MATLAB, LaTeX.

Selected Scientific Algorithms: Markov chain Monte Carlo, constrained dynamics, dynamic programming, kernel density estimation, ODE solvers.

PUBLICATIONS

Barranca, V., Johnson, D., et al. "Dynamics of the exponential integrate-and-fire model with slow currents and adaptation", *Journal of Computational Neuroscience,* 2014.

Pandey, S., Johnson, D., et al. "Self-assembly of mesoscale isomers: The role of pathways and degrees of freedom," *PLOS ONE,* Accepted.

PERSONAL INTERESTS

Bayesian Sports Prediction, February 2013 – Present

- Designed Bayesian models for predicting NCAA Basketball and English Premier League results, implemented inference schemes in Python.

Squash, Brown University Squash Club, October 2010 – Present

- Captained team to three consecutive Rhode Island Squash championships.