

PATRICK O'NEIL

PERSONAL INFORMATION

email poneil@masonlive.gmu.com
phone (703) 861-9549

EDUCATION

Doctor of Philosophy 2012-2016 George Mason University, Fairfax
Applied Mathematics
Focusing on Differential Equations, Dynamics, and Algebraic Topology with applications to high-dimensional data analysis. Advisor: Prof. Thomas WANNER

Bachelor of Science 2007-2011 Virginia Tech, Blacksburg
Major: Mathematics · Minor: Actuarial Science

WORK EXPERIENCE

GeoEye Analytics June 2011– Jan 2013 Junior Research Scientist
Developed parallel computing algorithms for generating probability distributions across global geospatial data.
Researched and developed large-scale covert network analysis algorithms and simulation tools.
Developed novel “Event Participation Detection” mathematical framework for predicting network member involvement in set of external events.

SPADAC Summer/Winter 2010 Intern
Assisted in the development of advanced fraud detection software.
Factor selection for machine learning algorithm used in fraud detection.

Lafarge Summer 2008, 2009 Project Management Office Intern
Established key elements of project management IT governance suite.
Developed several components of corporate project management training program.
Designed project management templates and managed the creation of a company-wide project management newsletter.

SKILLS OVERVIEW

Mathematics Partial/Ordinary Differential Equations, Finite Element Method, Topological Data Analysis, Graph Theory, Combinatorics, Statistics, Machine Learning

Computer PYTHON, R, C++, JAVA, C#, L^AT_EX, Linux, Mathworks Matlab, Wolfram Mathematica, Hadoop, Pig, HP Project Portfolio Management Suite, Microsoft Windows & Office

OTHER INFORMATION

Mathematical Modelling Awards **COMAP Mathematical Contest in Modeling**
2011 · *Outstanding Award and Mathematical Association of America (MAA) Prize*: Modeled VHF Repeater Coordination for a given area with an arbitrary population density. A designation of outstanding was given to four out of 1500 teams from around the world. Of these four, one was selected for the MAA prize.
2010 · *Honorable Mention*: Modeled serial killer attack tendencies and developed techniques to locate wanted criminals based on the locations of previous attacks.
2009 · *Meritorious Award*: Modeled cell phone growth over the past fifteen years and predicted future usage up to 50 years from now.

Other Accomplishments 2012 · Published “Dynamic, Covert Network Simulation” in Lecture Notes in Computer Science 7227
2012 · Presented at SBP12 Conference
2012 · Presented at QMDNS 2012 Conference
2012 · MAA Mathfest 2011
2009 · MD-DC-VA MAA Sectional Meeting
2008 · Lafarge Project Management Training