

Curriculum Vitae - Alex Rutherford

Personal

British Citizen
alex@alexrutherford.org
alexrutherford.org
@arutherfordium

Professional Experience

Research Scientist
UNICEF Office of Innovation, New York, NY, USA
(9/15-)

Data Scientist
United Nations Global Pulse, Executive Office of Secretary General, New York, NY, USA
(9/13-9/15)

Postdoctoral Researcher
Social Computing and Artificial Intelligence Laboratory, Masdar Institute, Abu Dhabi, UAE
(4/11-9/13)

Postdoctoral Researcher
(10/09-03/11)
New England Complex Systems Institute, Cambridge, MA, USA

Assistant Stockbroker/Investment Consultant
(9/2004-4/2005)
Hargreaves Lansdown Asset Management, Bristol, UK

Receptionist
(6/2003-9/2003)
Royal United Hospital, Bath, UK

Administrative Assistant
(6/2002-9/2002)
Ministry of Defence, Bath, UK

Education

Standard Arabic Regular Course (Levels 1-4), University of Damascus, Syria
11/08-6/09

Physics PhD, University College London, UK
10/05-10/08

Masters of Physics, University of Warwick
(1st Class Honours)
10/00-06/04

Computer Skills

- **Numerical Programming:** C++ (STL, Boost), Python (SciPy, matplotlib, NumPy, pandas), R, Objective C

- **Web Programming:** Javascript, jQuery, HTML, CSS
- **Databases:** SQL, mongoDB
- **Scripting and Visualisation Tools:** GIMP, OpenGL, ImageMagick, D3, LaTeX and shell scripting.

Languages

- **Modern Standard Arabic :** Advanced
- **Syrian/Gulf Arabic Dialects :** Conversational
- **Spanish :** Advanced

Additional Experience and Achievements

- Departmental award for prompt submission of PhD thesis
- Independent travel across Europe, South America, Africa and Middle East.
- Secretary of Management Committee, CARILA Latin America Welfare Group (2005-2008)

Workshops and Training

- Spark Summit East, AMPLab (2015)
- New England Complex Systems Institute Winter School, Massachusetts Institute of Technology (2008)
- CCP5 Molecular Simulation Summer School, University of Sheffield (2007)
- Understanding Molecular Simulation, University of Amsterdam (2007)
- Computational Chemistry Using High Performance Computing, CCLRC Daresbury Laboratory (2005)

Policy Papers and Other Communications

- [Can Big Data be Used as a Social Good in the Fight Against Disease Epidemics](#) (2016) UNICEF Stories blog
- [Mapping the Risk-Utility Landscape of Mobile Data for Sustainable Development and Humanitarian Action](#) (2015) UN Global pulse Project Series No.18
- [Understanding Immunisation Awareness and Sentiment Through Analysis of Social Media and News Content](#) (2015) UN Global Pulse Series No. 19
- [UN Global Sustainable Development Report](#) (2015) UN Department for Social and Economic Affairs
- [Using Mobile Phone Data and Airtime Credit Purchases to Estimate Food Security](#) (2015) UN Global Pulse Project Series No. 14
- [Using Mobile Phone Activity for Disaster Management During Floods](#) (2015) UN Global Pulse Project Series No. 2
- [The Pulse of Public Opinion: Using Twitter Data to Analyze Public Perception of Reform in El Salvador](#) (2015) World Bank Working Paper 7399
- [Estimating Migration Flows Using Online Search Data](#) (2015) UN Global Pulse project Series No. 4
- [Exploring the role of Data Science in assisting UN efforts in Syria](#) (2015) UN Global Pulse Blog
- [Thoughts on the Google Flu Trends Debate](#) (2014) UN Global Pulse Blog
- [Mobile Phone Network Data for Development](#) (2013) UN Global Pulse

Publications

- *Privacy-conscientious Use of Mobile Phone Data*, Y. de Montejoye, V. Blondel, G. Canright, N. de Cordes, S. Deletaille, K. Engo-Monsen, S. Gambs, M. Garcia-Herranz, J. Kendall, C. Kerry, G. Krings, M. Luengo-Oroz, N. Oliver, **A. Rutherford**, Z. Smoreda, E. Wetter, A. Pentland, L. Bengtsson, *under review (preprint)*
- “*Estimating Food Consumption and Poverty Indices with Mobile Phone Data*”, A. Decuyper, **A. Rutherford**, A. Wadhwa, J. Bauer, G. Krings, T. Gutierrez, V. Blondel, M. Luengo-Oroz, *in preparation (preprint)*
- “*Disentangling Network and Global Effects in Constitutional Political Development*” **A. Rutherford**, Y. Lupu, M. Cebrian, I. Rahwan, B. LeVeck and M. Garcia-Herranz, *under review (preprint)*
- “*The International Postal Network and Other Global Flows As Proxies for National Wellbeing*” D. Hiristova, **A. Rutherford**, J. Anson, M. Luengo-Oroz and C. Mascolo, *PLoS One* (2016) ([link](#))
- “*The Geography of Ethnic Violence*” **A. Rutherford**, M. Lim, R. Metzler, D. Harmon, J. Werfel, S. Bar-Yam, A. Gard-Murray, A. Gros, Y. Bar-Yam, *Conflict and Complexity* (2014)
- “*Flooding Through the Lens of Mobile Phone Activity*”, D. Pastor-Escuredo, A. Morales-Guzmán, Y. Torres-Fernández, J. Bauer, A. Wadhwa, C. Castro-Correa, L. Romanoff, J. Lee, **A. Rutherford**, V. Frias-Martinez, N. Oliver, E. Frias-Martinez, M. Luengo-Oroz. *Proceedings of IEEE Global Humanitarian Conference (2014)*. ([link](#))
- “*The Boundaries of Peaceful Coexistence*”, **A. Rutherford**, D. Harmon, J. Werfel, S. Bar-Yam, A. Gard-Murray, A. Gros, R. Xulvi-Brunet and Y. Bar-Yam. *PLoS One* (2014) 9(5). ([link](#))
- “*Corruption Motivates the Emergence of Civil Society*”, S. Abdullah, R. Sayed, I. Rahwan, B. LeVeck, M. Cebrian, **A. Rutherford** and J. Fowler. *Journal of Royal Society Interface* (2014) 11 ([preprint](#))
- “*Targeted Social Mobilisation in a Global Manhunt*”, **A. Rutherford**, M. Cebrian, I. Rahwan, S. Dsouza, J. McInerney, V. Naroditsky, M. Venanzi, N.R. Jennings, J.R. deLara, E. Wahlstedt and S. Miller. *PLoS One* (2013) 8(9) ([link](#)).
- “*The Limits of Social Mobilisation*”, **A. Rutherford**, M. Cebrian, S. Dsouza, E. Moro, S. Pentland and I. Rahwan. *Proceedings of the National Academy of Sciences* (2013) **110** (16). ([link](#))
- “*Global Manhunt Pushes the Limits of Social Mobilisation*”, I. Rahwan, S. Dsouza, **A. Rutherford**, V. Naroditskiy, J. McInerney, M. Venanzi, N. Jennings and M. Cebrian. *IEEE Computer* (2013) **46** (4) ([preprint](#))
- “*Electronic Effects in Radiation Damage Simulations*”, D.M. Duffy, S. Khakshouri and **A. Rutherford**, *Nuclear Instruments and Methods B* (2009) **20**, 267,53-57
- “*Modeling Swift Heavy Ion Irradiation in Iron*”, A. Rutherford and D.M. Duffy. *Nuclear Instruments and Methods B* (2009) **267**, 1
- “*Making Tracks in Metals*”, D.M. Duffy, N. Itoh, **A. Rutherford** and A.M. Stoneham, *Journal of Physics-Condensed Matter* (2008) **20**, 08082201
- “*The Effect of Electron-Ion Interactions on Radiation Damage Simulations*”, **A. Rutherford** and D.M. Duffy, *Journal of Physics-Condensed Matter* (2007) **19**, 496201
- “*Including the Effects of Electronic Stopping and Electron-Ion Interactions in Radiation Damage*

