Ryan Compton

CONTACT
INFORMATION

ryan@ryancompton.net   http://www.ryancompton.net
(310) 894-6829

CURRENT

Research Staff Member, Howard Hughes Research Laboratories, June 2012-present. Developed algorithms for mining massive modern datasets and predictive analytics. Conceived of and implemented a system which accurately inferred home locations for over one hundred million Twitter users and combined it with multilingual natural language processing tools to generate forecasts for thousands of international events.

EDUCATION

MS, PhD, Mathematics, UCLA, 2006-2012
    Dissertation: Sparsity promoting optimization in quantum mechanical signal processing.
    Advisor: Chris Anderson

BA, Mathematics/Physics, May 2006, New College of Florida
    Thesis title: Optimizing Cover Times with Constraints.
    Advisor: Patrick McDonald

CODING

Python: Five years, used for machine learning, numerical methods, and visualization.
Java: Two years, used for the Hadoop stack, Android, and various web apis.
Scala: One year, used for Apache Spark.
C/C++: Two years implementing numerical methods.
Matlab: Three years, used for linear algebra and optimization.
Linux: Currently administer a 24-node Hadoop cluster. Home Linux user since 2002.

FIRST-AUTHOR
PUBLICATIONS

Ryan Compton, Matthew S. Keegan, Jiejun Xu "Inferring the Geographic Focus of Online Documents from Social Media Sharing Patterns", *Computational Approaches to Social Modeling (ChASM) Workshop at WebSci*, 2014

Ryan Compton, David Jurgens, David Allen, "Geotagging One Hundred Million Twitter Accounts with Total Variation Minimization" *IEEE BigData 2014* arXiv: 1404.7152 **Press coverage:** Forbes, Business Insider, New York Observer, Daily Caller, MIT Technology Review, Komando, Serene Risc Digest, Schneier on Security

Ryan Compton, Craig Lee, Jiejun Xu, Luis Artieda-Moncada, Tsai-Ching Lu, Lalindra De Silva, Michael Macy "Using Publicly Visible Social Media to Build Detailed Forecasts of Civil Unrest", *Springer Security Informatics*, 2014

Ryan Compton, Craig Lee, Tsai-Ching Lu, Lalindra De Silva, Michael Macy, "Detecting future social unrest in unprocessed Twitter data: Emerging phenomena and big data", *IEEE-ISI*, 2013 **best paper nomination**

Ryan Compton, Nanette Jarenwattananon, Louis Bouchard and Stanley Osher, "Model based compressed sensing reconstruction of nonuniformly sampled NMR signals", to be submitted

Ryan Compton, Stanley Osher and Louis Bouchard, "Hybrid regularization for MRI reconstruction with static field inhomogeneity correction", *IEEE International Symposium on Biomedical Imaging* , May 2012 (Journal version: Inverse Probl. Imag. 7, 1215-1233 (2013))

Ryan Compton, Hankyu Moon and Tsai-Ching Lu, "Catastrophe prediction via estimated network autocorrelation", *WIN Workshop on Information in Networks*, September 2011