

## Ryan Compton

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| CONTACT<br>INFORMATION       | ryan@ryancompton.net<br>(310) 894-6829  | <a href="http://www.ryancompton.net">http://www.ryancompton.net</a> |
| 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 natural language processing tools to generate forecasts for thousands of social media-organized events internationally.   |   |
| EDUCATION                    | <b>MS, PhD</b> , Mathematics, UCLA, 2006-2012<br>Dissertation: Sparsity promoting optimization in quantum mechanical signal processing.<br>Advisor: Chris Anderson<br><br><b>BA</b> , Mathematics/Physics, May 2006, New College of Florida<br>Thesis title: Optimizing Cover Times with Constraints.<br>Advisor: Patrick McDonald  |   |
| CODING                       | <b>Python</b> : Five years, used for machine learning, numerical methods, and visualization.<br><b>Java</b> : Two years, used for the Hadoop stack, Android, and various web apis.<br><b>Scala</b> : One year, used for Apache Spark.<br><b>C/C++</b> : Two years implementing numerical methods.<br><b>Matlab</b> : Three years, used for linear algebra and optimization.<br><b>Linux</b> : Currently administer a 24-node Hadoop cluster. Home Linux user since 2002.  |   |
| FIRST-AUTHOR<br>PUBLICATIONS | Ryan Compton, Matthew S. Keegan, Jiejun Xu “Inferring the Geographic Focus of Online Documents from Social Media Sharing Patterns”, <i>Computational Approaches to Social Modeling (ChASM) Workshop at WebSci</i> , 2014<br><br>Ryan Compton, David Jurgens, David Allen, “Geotagging One Hundred Million Twitter Accounts with Total Variation Minimization” <i>IEEE BigData 2014</i> arXiv: 1404.7152 <b>Press coverage</b> : <a href="#">Forbes</a> , <a href="#">Business Insider</a> , <a href="#">New York Observer</a> , <a href="#">Daily Caller</a> , <a href="#">MIT Technology Review</a> , <a href="#">Komando</a> , <a href="#">Serene Risc Digest</a> , <a href="#">Schneier on Security</a><br><br>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”, <i>Springer Security Informatics</i> , 2014<br><br>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”, <i>IEEE-ISI</i> , 2013 <b>best paper nomination</b><br><br>Ryan Compton, Nanette Jarenwattananon, Louis Bouchard and Stanley Osher, “Model based compressed sensing reconstruction of nonuniformly sampled NMR signals”, to be submitted<br><br>Ryan Compton, Stanley Osher and Louis Bouchard, “Hybrid regularization for MRI reconstruction with static field inhomogeneity correction”, <i>IEEE International Symposium on Biomedical Imaging</i> , May 2012 (Journal version: <i>Inverse Probl. Imag.</i> 7, 1215-1233 (2013))<br><br>Ryan Compton, Hankyu Moon and Tsai-Ching Lu, “Catastrophe prediction via estimated network autocorrelation”, <i>WIN Workshop on Information in Networks</i> , September 2011 |   |