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Publications

Refereed

A. Gutfraind, “Terrorism as a Mathematical Problem,” *SIAM News*, vol. 42, p. 12, Oct 2009.

A. Gutfraind, A. A. Hagberg, and F. Pan, “Optimal interdiction of unreactive Markovian evaders,” in *CPAIOR 2009* (J. Hooker and W.-J. van Hoes, eds.), Lecture Notes in Computer Science, Springer, May 2009. <http://arxiv.org/abs/0903.0173>.

A. Gutfraind, *Mathematical Methods in Counterterrorism*, ch. Understanding Terrorist Organizations with a Dynamic Model. Springer-Verlag, 2009.

A. Gutfraind, “Understanding terrorist organizations with a dynamic model,” *Studies in Conflict and Terrorism*, vol. 32, pp. 45–59, Jan 2009.

A. Gutfraind, A. A. Hagberg, D. Izraelevitz, and F. Pan, “Interdicting a Markovian evader,” 2009. In resubmission for *European J. of Operations Research*. Preprint is to appear in arxiv.org.

M. Genkin and A. Gutfraind, “How Do Terrorist Cells Self-Assemble? Insights from an Agent-Based Model,” *SSRN Working Paper*, no. 1031521, 2008. Winner: 2008 ASA Graduate Student Paper Award in Mathematical Sociology.

A. Gutfraind and A. Kempf, “Error-reducing structure of the genetic code indicates code origin in non-thermophile organisms,” *Orig Life Evol Bios*, vol. 38, no. 1, pp. 75–85, 2008.

In Preparation

A. Gutfraind, “Faster algorithms for betweenness centrality,” 2009. Manuscript available by request.

A. Gutfraind, “Inferring Evolving Communities,” 2009. Manuscript available by request.

Technical Reports

A. Gutfraind and K. Ahmadizadeh, “Markovian Network Interdiction and the Four Color Theorem,” 2009. <http://arxiv.org/abs/0911.4322>.

F. Gilfeather(co-PI) and A. Gutfraind(co-PI), “Multi-objective multivariate analysis and optimization of cascade resilience in networks.” DTRA grant proposal, 2009.

A. Gutfraind, “Constructing networks for cascade resilience,” 2009. <http://arxiv.org/abs/0906.0786>.

F. Pan(co-PI), A. A. Hagberg(co-PI), and A. Gutfraind(contributor), “Robust network interdiction under uncertainty.” successful DTRA grant proposal (10% success rate), 2008.

Alexander “Sasha” Gutfraind, Ph.D.

A. Gutfraind, “Error-tolerant coding and the genetic code,” Master’s thesis, University of Waterloo, Waterloo, Ontario, Canada, 2004.

A. Gutfraind, “Preparing undergraduate students for success in graduate school.” Report towards Certificate in University Teaching. Manuscript is available by request., 2005.

Talks and Posters

A. Gutfraind, F. Pan, A. A. Hagberg, and D. Izraelevitz, “Network Interdiction with a Markovian Adversary,” Oct. 2009 (expected). Contributed talk at INFORMS Annual Meeting, San Diego, CA.

A. Gutfraind, “Constructing networks for cascade resilience,” July 2009. Poster - SIAM Annual meeting, Denver, CO.

A. Gutfraind, “Understanding Terrorist Organizations with a Dynamic Model,” May 2009. Mini-symposium and introductory talk at SIAM Snowbird Conference on Applications of Dynamical Systems.

A. Gutfraind, “Constructing networks for cascade resilience,” June 2009. Talk at the International Workshop on Coping with Crises in Complex Socio-Economic Systems, Zurich.

A. Gutfraind, “Resilient complex networks,” April 2009. Talk at the Risk 2009 conference, Santa Fe, NM.

A. Gutfraind, “Understanding Terrorist Organizations with a Dynamic Model,” Mar 2009. Invited talk at the 5th Conference on Mathematical Methods in Counterterrorism.

A. Gutfraind, “Network interdiction of Markovian evaders,” 2008. Poster - DIMACS Workshop on Port Security, Piscataway, NJ.

A. Gutfraind, F. Pan, and A. A. Hagberg, “Interdicting nuclear smuggling with imperfect information,” Oct. 2008. Contributed talk at INFORMS Annual Meeting, Washington, DC.

A. Gutfraind, “Optimal interdiction of constrained Markovian evaders,” 2008. Poster - SIAM Annual meeting, San Diego, CA.

M. Genkin and A. Gutfraind, “How Do Terrorist Cells Self-Assemble? Insights from an Agent-Based Model,” Dec. 2007. Invited talk at the Society for Risk Analysis Annual Conference.

A. Gutfraind, “A mathematical model of terrorist organizations,” 2007. Invited Poster - DHS University Network Summit.

A. Gutfraind and A. Kempf, “Reverse-engineering the genetic code using information theory.” Poster and Workshop Presentation - Astrobiology and Origins of Life Conference, 2005.