

Thomas Lotze

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executive summary

Data analyst with strong programming background. Experienced in visualization, web technologies, and statistical analysis. Ph.D. in applied mathematics and bachelor's in computer science.

professional experience

DoD/Signals Intelligence Directorate | Fort Meade, MD

Sep 2001 - Jan 2004

Global Network Security Analyst:

- Created data and process standards across related branches, and developed software tools to support these standard formats and automate knowledge management processes.
- Received two team awards for projects and two individual cash awards for superior performance; received several official letters of appreciation.

DoD/Data Network Technologies | Fort Meade, MD

Feb 2004 - Mar 2007

Project Manager and Developer:

- Developer or lead developer for numerous software projects using C, C++, Java, and Perl.
- Developed a high-impact program with a team of three developers. The results from the program were recognized as one of the top 5 metrics for division-level performance.
- Managed a team of 15 developers to create an autonomous agent program to perform new techniques never before used. Received a special award for my work, noting "Mr. Lotze...has exerted an extraordinary commitment in advancing the Intelligence Community's capabilities", "demonstrated an unparalleled effectiveness", and "has proven that he can lead and enable others to produce significant results to some of the...community's hardest problems."
- Received one team award and two individual cash awards for superior performance.

Other Experience

- Efficient Frontier: In Python, created tools to detect and visualize seasonal advertising patterns.
- Livermore Labs: In Java, created programs to analyze biologic research networks.
- Cambridge Technology Partners: In Perl, created a system to track employee referrals.
- Western Psychiatric Institute and Clinic: In C, created a networked patient monitoring system.
- Novigen Sciences (now Exponent): Assistant System Administrator.

education

HARVARD UNIVERSITY | Cambridge, MA

B.A. June 2001

B.A. *Magna Cum Laude* in Computer Science. 3.92 GPA (4.0 in major). Phi Beta Kappa. John Harvard Scholarship, "for academic achievement of the highest distinction," all years.

UNIVERSITY OF MARYLAND | College Park, MD

Ph.D. August 2009

Ph.D. in Applied Mathematics received August 2009. M.S. received December 2007. NSF VIGRE Fellowship, 2005-2006; DHS Fellowship, 2006-2009.

computer skills

- **R:** 5 years experience using R, including creating packages.
 - **Perl:** 9 years experience with Perl; familiar with many CPAN modules and RE features.
 - **Java:** 6 years experience with Java, including threading, reflection, and XML processing.
 - **Web Programming:** Experience with CGI, CSS, Javascript, PHP, SQL.
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associations

American Mathematical Society (member)
American Statistical Association (member)
International Society for Disease Surveillance (Research Committee member)
Phi Beta Kappa Association (member)

publications

- Lotze, T, Shmueli, G. and Yahav, I., "Simulating and Evaluating Biosurveillance Datasets", *Biosurveillance: A Health Protection Priority*, Kass-Hout, T. & Zhang, X. (ed.), Chapman and Hall, Forthcoming (2010).
- Yahav, I., Lotze, T. and Shmueli, G., "Algorithm Combination for Improved Detection in Biosurveillance", *Infectious Disease Informatics and Biosurveillance: Research, Systems, and Case Studies*, Springer, Forthcoming.
- Lotze, T. and Shmueli, G., "How does improved forecasting benefit detection? An application to biosurveillance", *International Journal of Forecasting*, 2008, 25(3), 467-483.
- Lotze, T. and Shmueli, G. "Ensemble Forecasting for Disease Outbreak Detection", Proceedings of the 23rd AAAI Conference on Artificial Intelligence (AAAI-08), Chicago, IL, 2008.
- Lotze, T., Murphy, S. and Shmueli, G., "Preparing Biosurveillance Data for Classic Monitoring", *Advances in Disease Surveillance*, 2008, 6, 1-20.
- Lotze, T. and Shmueli, G. "On the relationship between forecast accuracy and detection performance: An application to biosurveillance", Proceedings of the 2008 IEEE Conference on Technologies for Homeland Security, Boston, MA, 2008.
- Lotze, T., Shmueli, G., Murphy, S. and Burkom, H. (2006) "A Wavelet-based Anomaly Detector for Early Detection of Disease Outbreaks", Proceedings of the 23rd International Conference on Machine Learning (ICML), Workshop on Machine Learning Algorithms for Surveillance and Event Detection, Pittsburgh, PA.