

Jeffrey Graves

Curriculum Vitae

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 [jeffrey-graves](#)

EDUCATION

2014–Present **Ph.D., Computer Science**, *Tennessee Tech University*, Cookeville, TN.

Adviser William Eberle

2011–2016 **M.S., Mathematics**, *Tennessee Tech University*, Cookeville, TN.

Thesis Walsh Functions as Group Characters

Adviser Rafal Ablamowicz

2007–2011 **M.S., Computer Science**, *Tennessee Tech University*, Cookeville, TN.

Thesis Source Code Plagiarism Detection Using a Graph-Based Approach

Adviser William Eberle

2003–2007 **B.S., Computer Science**, *Tennessee Tech University*, Cookeville, TN.

GPA 3.61/4.0

Honors Cum Laude

AWARDS AND HONORS

2014 **Graduate Student Teaching Award**, *Mathematics Department*, Tennessee Tech University.

2013 **Challenge Assistantship**, *Mathematics Department*, Tennessee Tech University.

TEACHING EXPERIENCE

Computer Science

- Design and Analysis of Algorithms, Fall 2014, Spring 2015, Fall 2015

Mathematics

- College Algebra, Spring 2012, Fall 2012, Fall 2013
- Finite Math, Spring 2013, Spring 2014
- Pre-Calculus I, Fall 2013, Spring 2014
- Pre-Calculus II, Spring 2014
- Transitional Algebra, Fall 2013

RESEARCH EXPERIENCE

- Summer 2016 **Advanced Data and Workflows Intern**, *National Center for Computational Sciences*, Oak Ridge Natural Laboratory.
- Summer 2015 **Computational Data Analytics Intern**, *Computational Sciences and Engineering Division*, Oak Ridge Natural Laboratory.
- 2009–2010 **Department of Energy Grant**, *Center for Manufacturing Research*, Tennessee Tech University.
Development of an electrical capacitance tomography sensing system to detect defects that arise in lost-foam casting processes as well as the development of packet recovery techniques for use wireless sensor networks deployed in foundry environments.
- 2008–2011 **Department of Homeland Security Grant**, *Computer Science Department*, Tennessee Tech University.
Focussed on applying graph-based anomaly detection methods to areas such as insider threat detection, intrusion detection, cargo shipping, and source code similarity metrics.
- 2007–2008 **Vanderbilt eHealth Initiative Subgrant**, *Computer Science Department*, Tennessee Tech University.
Development of a framework to integrate electronic patient record systems. Implementation of a distributed patient information system for health care providers to enable the sharing of patient records between separate health care organization environments.

UNIVERSITY SERVICE

- 2015–2017 **Graduate Executive Committee Member**, *College of Engineering*, Tennessee Tech University.
- 2015–2017 **Graduate Student Mentor**, *Computer Science Department*, Tennessee Tech University.

RESEARCH COMMUNITY SERVICE

- 2015 **SIAM Data Mining Conference (SIAM) External Reviewer**.

ACADEMIC WORK EXPERIENCE

- 2014–Present **Graduate Teaching Assistant**, *Computer Science Department*, Tennessee Tech University.

2013–2014 **Adjunct Faculty**, *Mathematics Department*, Tennessee Tech University.

2012–2013 **Graduate Teaching Assistant**, *Mathematics Department*, Tennessee Tech University.

2011–2012 **Mathematics Tutor**, *Library Learning Commons*, Tennessee Tech University.

NON-ACADEMIC WORK EXPERIENCE

2011–2014 **Contract Programmer**, *Automate My Data*, Algood, TN.

Wrote and maintained materials requirement planning software and billing systems. Work involved Java, Python, MySQL, Pervasive.SQL, HTML, CSS, and Java Servlets

TECHNICAL PROFICIENCIES

Proficient In

Languages C, C++, OpenMPI, OpenMP, Java, Python
Technologies BSD, Linux, MacOSX, L^AT_EX

Familiar With

Languages C#, PHP, Lisp, SQL, XML, RDF/SPARQL, HTML, CSS, Java Script
Libraries OpenMPI, OpenMP
Technologies Apache Jena Fuseki, Stardog, MySQL, PostgreSQL, SQLite, Pervasive.SQL

RESEARCH INTERESTS

Computer Science Algorithms, Theory of Computation, Artificial Intelligence, Graph Based Anomaly Detection
Mathematics Graph Theory, Coding Theory, Abstract Algebra, Real Analysis
Recreational Fractals, Strange Attractors

PUBLICATIONS

Journal Articles

William Eberle, Lawrence Holder, and Jeffrey Graves. Insider threat detection using a graph-based approach. *Journal of Applied Security Research*, 6(1):32–81, January 2011

Conference Papers

Sreenivas R. Sukumar, Larry W. Roberts, and Jeffrey A. Graves. A reasoning and hypothesis-generation framework based on scalable graph analytics. *Proceedings of the Cray User Group Conference*, 2016

Michael Okaro, Mohamed Abdelrahman, and Jeff Graves. Monitoring metal fill profile in lost foam casting process using capacitive sensors and metal fill time estimation. In *Sensors Applications Symposium (SAS), 2011 IEEE*, pages 76–81. IEEE, February 2011

William Eberle, Lawrence Holder, and Jeffrey Graves. Using a graph-based approach for discovering cybercrime. In *Florida Artificial Intelligence Research Society Conference*, May 2010

William Eberle, Lawrence Holder, and Jeffrey Graves. Detecting employee leaks using badge and network IP traffic. In *IEEE Symposium on Visual Analytics Science and Technology*, October 2009

Mike Rogers, Sheikh Ghafoor, and Jeff Graves. Braid: Distributed patient information for health care providers. In *International Conference on Internet Computing*, pages 132–138, July 2009

Workshop Papers

Ferrol Aderholdt, Jeffrey A. Graves, and Manjunath Gorentla Venkata. Parallelizing single source shortest path with OpenSHMEM. In *OpenSHMEM 2017: Fourth workshop on OpenSHMEM and Related Technologies*, 2017

Rina Singh, Jeffrey A Graves, Sangkeun Lee, Sreenivas R Sukumar, and Mallikarjun Shankar. Enabling graph appliance for genome assembly. In *Proceedings of the 2015 IEEE International Conference on Big Data, BIG DATA '15*, pages 2583–2590, Washington, DC, USA, October 2015. IEEE Computer Society

Posters

Rina Singh, Jeffrey A. Graves, and Douglas A. Talbert. Complex patterns in dynamic attributed graphs. In *Proceedings of the 25th International Conference Companion on World Wide Web, WWW '16 Companion*, pages 105–106, Republic and Canton of Geneva, Switzerland, 2016. International World Wide Web Conferences Steering Committee

Mike Rogers, Sheikh Ghafoor, and Jeff Graves. A framework for integrating electronic patient record systems. American Medical Informatics Association Annual Symposium, 2009