

Curriculum Vitae

Tyrone S. Toland, Ph.D.

Department of Informatics
University of South Carolina Upstate
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EDUCATION

- University of South Carolina, Columbia, SC, Computer Science, Ph.D., 2005
Dissertation: “*A Study of the Inference Problem in Dynamic Databases*”
Advisors: Dr. Caroline M. Eastman and Dr. Csilla Farkas
- University of South Carolina, Columbia, SC, Computer Science, M.S., 2000
Thesis: “*An Information Retrieval System to Manage Program Maintenance Reports in a Data Processing Shop*”
Advisor: Dr. Caroline M. Eastman
- University of South Carolina Upstate, Spartanburg, SC, Computer Science
Applied Mathematics Concentration, B.S., 1990

TEACHING INTERESTS

Computer Programming, Distributed Database, Database Design, Database Security, Information Retrieval, Information Security, Data Structures

RESEARCH INTERESTS

Database Security, Information Retrieval, Information Security, Web Mining Security, Service-Oriented Architecture, Web Services

ACADEMIC EXPERIENCE

- 2012 – Present, **Associate Professor with Tenure**, Department of Informatics, University of South Carolina (USC) Upstate
- 2006 – 2012, **Assistant Professor**, Department of Informatics, University of South Carolina (USC) Upstate
- 2003 – 2006, **Instructor**, Department of Informatics, University of South Carolina (USC) Upstate
- 1996 – 2003, **Adjunct Instructor**, Industry Technology and Business Department, Midlands Technical College

- Spring 2001, **Adjunct Instructor**, Math and Computer Science Department, Benedict College
- Fall 1992 – Spring 1995, **Adjunct Instructor**, Continuing Education Department, Spartanburg Technical College
- Spring 1991 – Fall 1991, **Adjunct Instructor**, Math Department, Phillips Junior College

PROFESSIONAL EXPERIENCE

- 1998 – 2000, **Systems Programmer I**, Computer Services Department, University of South Carolina, Duties: Maintain the IBM Virtual Machine (VM) system, which includes creating, modifying, deleting and resolving VM user related problems as well as installing third party VM software
- 1995 – 1998, **Computer Programmer II**, Computer Services Department, University of South Carolina, Duties: Develop and maintain Common Business Oriented Language (COBOL) programs in an Information Management System (IMS) batch and online environment
- 1992 – 1995, **Computer Programmer**, Electronic Health Transactions, Metropolitan Life Insurance Company (MetLife), Greenville, South Carolina, Duties: Maintain COBOL programs in a batch and an online environment

TEACHING

COURSES TAUGHT

- **University of South Carolina Upstate, 2003 – Present**
 - Visual Basic Programming I (SCSC 139 and SIMS 186)¹
 - Visual Basic Programming II (SCSC 239 and SIMS 286)¹
 - Database System Design (SCSC 325, SIMS 420, SCSC 520I, SCSC 520)¹
 - Database Implementation Application and Administration (SIMS 421 and SCSC 521)¹
 - Computer Security (SIMS 417)
 - Senior Seminar in Information Management and Systems (SIMS 499)
 - **Course Development**
 - Healthcare Information Security (SHIM 417)
 - This course was developed to provide the Department of Informatics majors with the important and necessary security skill set that all information technology employees need to possess.
 - **Face-to-face** and **Online**

¹ This course was taught under different course numbers.

- **Course Revision**
 - **Data Warehousing and Decision Support Systems Technology (SIMS 421)**
 - The focus of the course content and title was revised from a database development course to a data warehousing course. The data warehousing focus is more in line with the Department of Informatics mission to prepare “analysts, problem solvers, managers, and user advocates in the information technology field.”
 - **Face-to-face and Online**
- **Midlands Technical College, 1996 - 2003**
 - Introductory to C and C++ Programming (CPT-234-B65)
- **Benedict College, 2001**
 - Visual BASIC (CSC 133)
- **University of South Carolina, 2001**
 - Introduction to Computer Concepts (CSCE 101)
- **Phillips Junior College, 1991**
 - Business mathematics and remedial mathematics

CERTIFICATION

- *“Teaching Online Certification Course,”* University of South Carolina Upstate, SC, July 2012

INSTRUCTIONAL TECHNOLOGY

- Blackboard Respondus

INVITED WORKSHOP PARTICIPATION

- *“2012 NSF Minority Faculty Development Workshop,”* Atlanta, GA, March 15 - 18, 2012
- *“2011 Academic Workshops for Underrepresented,”* Los Angeles, CA, February 24 – 27, 2011
- *“2010 NSF Minority Faculty Development Workshop,”* Cambridge, MA, March 21 - 24, 2010
- *“2009 Academic Workshop for Underrepresented Assistant Professors, Associate Professors, and Senior Doctoral Students,”* Portland, OR, 2009
- *“Seventh Annual Future Faculty and Professionals Symposium (FFPS) in conjunction with The National Consortium for Graduate Degrees for Minorities in Engineering and Science Inc.’s (GEM Consortium), 2005 Annual Board Meeting,”* Boston, MA, 2005

SERVICE

DEPARTMENT OF INFORMATICS

- **Chair**, Peer Review Committee, Department of Informatics, **2013 – present**
- **Advisor**, Department of Informatics Majors, **2003 – present**
- **Chair**, Program Director of Health Information Management Search Committee, Department of Informatics, **Spring 2014**
- **Chair**, Program Instructor of Health Informatics Search Committee, Department of Informatics, **Spring 2014**
- **Member**, Assistant Professor of Informatics Search Committee, Department of Informatics, **Spring 2014**
- **Chair**, Assistant Professor of Informatics Search Committee, Department of Informatics, **Spring 2013**
- **Panel Coordinator and Moderator**, “Facing the Challenges of Finding a Job in the Current Economy,” **Fall 2009, Fall 2010**
- **Member**, Director of Health Information Management (HIM)/Instructor Search Committee, Department of Informatics, **Summer 2010**
- **Member**, Director of Health Information Management (HIM)/Instructor Search Committee, Department of Informatics, **Fall 2006**
- **Chair**, Director of Health Information Management (HIM)/Assistant Professor of Informatics Search Committee, Department of Informatics, **Spring 2006**
- **Member**, Assistant Professor of Informatics Search Committee, Department of Informatics, **Spring 2005**
- **Member**, Instructor of Informatics Search Committee, Department of Informatics, **Spring 2004**

COLLEGE OF ARTS AND SCIENCES

- **Member**, Peer Review Committee, Department of Mathematics and Computer Science, **2013 – 2014**
- **Member**, Academic Grievance Panel, College of Arts and Sciences, **2009**

USC UPSTATE

- **Member**, Faculty Senate, **2005 – 2008, 2014 – present**
- **Member**, Faculty Executive Committee, **2014 - present**
- **Member**, Tenure-Track Assistant or Associate Professors of Management Search Committee, Johnson College of Business and Economics, **2013 - 2014**
- **Member**, Peer Review Committee, Mathematics and Computer Science, **2013 - 2014**
- **Member**, General Education Committee, **2011 – 2014**
- **Member**, Parking Appeals Committee, **2012 - 2014**
- **Member**, Executive Academic Affairs Committee, **2008 – 2011**
- **Member**, Housing Appeals Committee, **2009 - 2010**
- **Member**, Dean Search Committee, Mary Black School of Nursing, **2009 - 2010**

- **Member**, Director of Alumni Relations, Annual Giving, and University Events Search Committee, **2009**
- **Member**, External Review Task Force, **2008 - 2009**
- **Advisor**, Office of Academic Advising for Undeclared Majors, **2006 – 2008**
- **Member**, Faculty Advisory Committee, **2005 - 2008**
- **Advisor**, African American Association (AAA), **2006 – 2007**
- **Entertainment Coordinator**, Opportunity Network program, **April 13, 2005**
- **Member**, Police Chief Search Committee, **2004**

COMMUNITY SERVICES

- **PANEL PARTICIPATION**
 - **Panelist**, “Getting Ready for Advanced Degrees Lab (GRAD Lab)” co-sponsored by the National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. (*GEM Consortium*) and the Computer Science and Engineering Department at the University of South Carolina, Columbia, SC, April 21, 2007.
 - **Panelist**, “Graduate Student Forum”, *8th Annual Science & Engineering Research Conference*, South Carolina Alliance for Minority Participation (SCAMP), University of South Carolina, Columbia, SC, August 2002.
 - **Panelist**, “Excelling in Graduate School,” *TRIO/Ronald E. McNair Post-Baccalaureate Achieve Program*, University of South Carolina, Columbia, SC, June 2001.
- **COMMUNITY OUTREACH**
 - **Board Member**, Highland Community Development Corporation, **2014 - present**
 - **Judge**, Piedmont Region III Science Fair, Spartanburg, SC, **2013**
 - **Keynote Speaker**, Graduation Day Program, “United House of Prayer for All People”, Spartanburg, SC, **May 2012**
 - **Participant**, College Day, McCracken Junior High School, Spartanburg, SC, **2008**
 - **Instructor**, Basic Computer Skills, Spartanburg Housing Authority, Spartanburg, SC, **2007 – 2009**
 - **Instructor**, Mastering Excel, Spartanburg Housing Authority, Spartanburg, SC, **2007 – 2009**
 - **Participant**, College, Career and Health Fair, Piney Grove Baptist Church, Cowpens, SC, **2007**
 - **Presenter**, Research Methods in Computing, University of South Carolina, Columbia, SC, **2006**
 - **Presenter**, Benefits of Computer Literacy Skills, Resident Meeting for Spartanburg Housing Authority, Spartanburg, SC, **December 5, 2006**
 - **Presenter**, Obtaining a Successful Career, Urban League, Spartanburg, SC, **July 25, 2006**

- **Presenter**, Challenges of Being Accepted into Graduate School, Graduate (Grad) School Preparation (Prep) Workshop, University of South Carolina Upstate, Spartanburg, SC, **2006**
- **Judge**, Piedmont Region III Science Fair, Spartanburg, SC, **2006**
- **Special Awards Judge**, Piedmont Region III Science Fair, Spartanburg, SC, **2006**
- **Judge**, South Carolina Academy of Science (SCAS), Columbia, SC, **2006**
- **Keynote Speaker**, "Sixth Annual Banquet: Celebration of Education," Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP), University of South Carolina Upstate, Spartanburg, SC, **August 2005**

- **INVITED MUSICAL ENGAGEMENTS**
 - **Piano Accompanist**, "African-American Awareness Club Program," Dorman High School, Spartanburg, SC, **2011**
 - **Piano Accompanist**, "Pastor Installation Service," Macedonia Missionary Baptist, Spartanburg, SC, **2010**
 - **Piano Accompanist**, "Hat Program," Lebanon Presbyterian Church, USA, Ridgeway, SC, **2010**
 - **Piano Accompanist**, "Family Day", Lebanon Presbyterian Church, USA, Ridgeway, SC, **2009**
 - **Piano Accompanist**, "Youth Choir Anniversary," Mountain View Baptist Church, Greenville, SC, **2009**
 - **Director and Piano Accompanist**, "A New Year's Eve Celebration in Word and Song," Foster's Grove Baptist Church, Chesnee, SC, **2009, 2010**
 - **Director and Piano Accompanist**, "Sounds of Mass Voices Annual New Year's Concert," Spartanburg, SC, **2007, 2008, 2009, 2010**
 - **Piano Accompanist**, "Annual Mother's Day Concert," Monks Grove Baptist Church, Monks Grove, SC, **2004 – 2008, 2010, 2011**
 - **Piano Accompanist**, "Most Memorable Songs Recording," Monks Grove Baptist Church, Monks Grove, SC, **2004**

SCHOLARSHIP

LIST OF REFEREED PUBLICATIONS

JOURNAL

- **T. S. Toland**, C. Farkas, C. M. Eastman. "The inference problem: Maintaining maximal availability in the presence of database updates," *Computers & Security*, Volume 29, Issue 1, February 2010, pp. 88-103.

REFEREED CONFERENCE PROCEEDINGS

- Kollmannsperger, S., **Toland, T. S.** "Using Football Formations in a Honeypot Environment," *12th Annual SC Upstate Research Symposium*, Spartanburg, SC, April 8, 2016.
- Tzacheva, A. A., **Toland, T. S.**, Poole, P. H., Barnes, D. J. "Ontology Database System and Triggers," in *Proceedings of The Twelfth International Symposium on Intelligent Data Analysis (IDA 2013)*, A. Tucker et al. (Eds.), October 17-19, 2013, Royal Statistical Society, London, United Kingdom, Springer, Heidelberg, LNCS 8207, pp. 416-426.
- **T. Toland.** "Simple XML Messaging Framework," *In the Proceedings of the 48th Annual Association for Computing Machinery (ACM) Southeast Conference*, Oxford, MS, April 15 – 17, 2010, pp. 81–87.
- **T. S. Toland.** "Yet Another Database Constraint Checker: Database Constraint Evaluator," *47th Annual Association for Computing Machinery (ACM) Southeast Regional Conference*, Clemson, SC, March 19 - 21, 2009.
- **T. S. Toland**, C. Farkas, C. M. Eastman. "Dynamic Disclosure Monitor (D²Mon): A Survey of Open Research Problems," *In the Proceedings of 1st Computer Security Conference (CSC)*, Myrtle Beach, SC, April 12 - 13, 2007.
- **T. Toland**, C. Farkas, and C. Eastman. "Dynamic Disclosure Monitor (D²Mon): An Improved Query Processing Solution," *In the Proceedings of 2nd Workshop on Secure Data Management in association with the 31st International Conference on Very Large Databases (VLDB) 2005*, Trondheim, Norway, August 30 to September 2, 2005.
- C. Farkas, **T. Toland**, and C. Eastman. "The inference problem and updates in relational databases," *In the Proceedings of the Fifteenth Annual IFIP WG 11.3 Working Conference on Database and Applications Security*, Niagara on the Lake, Ontario, Canada, July 15-18, 2001, pp. 171-186.
- **T. Toland** and C. Eastman. "An Information Retrieval System to Manage Program Maintenance Reports in a Data Processing Shop," *In the Proceedings of the 38th Annual Association for Computing Machinery (ACM) Southeast Conference*, Clemson, SC, April 7-8, 2000, pp. 81–87.

LIST OF REFEREED PRESENTATIONS

- **T. S. Toland**, J. King, P. Boubre. "Cloud Computing Framework," *9th Annual SC Upstate Research Symposium*, Spartanburg, SC, April 19, 2013.

- A. Tzacheva, **T. Toland**, P. Poole, and D. Barnes. "Ontology Database System and Triggers," 9th Annual SC Upstate Research Symposium, Spartanburg, SC, April 19, 2013.
- **T. S. Toland**. "Yet Another Database Constraint Checker: Database Constraint Evaluator," *47th Annual Association for Computing Machinery (ACM) Southeast Regional Conference*, Clemson, SC, March 19 - 21, 2009, (Extended Abstract).
- **T. S. Toland**, C. Farkas, C. M. Eastman. "Dynamic Disclosure Monitor (D²Mon): A Survey of Open Research Problems," *1st Computer Security Conference (CSC)*, Myrtle Beach, SC, April 12 - 13, 2007.
- **T. Toland**, C. Farkas, and C. Eastman. "Dynamic Disclosure Monitor (D²Mon): An Improved Query Processing Solution," *2nd Workshop on Secure Data Management in association with the 31st International Conference on Very Large Databases (VLDB) 2005*, Trondheim, Norway, August 30 to September 2, 2005.
- C. Farkas, **T. Toland**, and C. Eastman. "The inference problem and updates in relational databases," *Fifteenth Annual IFIP WG 11.3 Working Conference on Database and Applications Security*, Niagara on the Lake, Ontario, Canada, July 15-18, 2001, pp. 171-186.
- **T. Toland** and C. Eastman. "An Information Retrieval System to Manage Program Maintenance Reports in a Data Processing Shop," *38th Annual Association for Computing Machinery (ACM) Southeast Regional Conference*, Clemson, SC, April 7-8, 2000, pp. 81–87.

NON-REFEREED CONFERENCES AND WORKSHOPS PRESENTATION

- **T. Toland**. "A Simple XML Messaging Framework for Instruction," *Poster Session: 2010 NSF Minority Faculty Development Workshop*, Cambridge, MA, March 21 - 24, 2010.
- **T. Toland**, C. Farkas, and C. Eastman. "The Inference Problem: Maintaining Maximal Availability in the Presences of Database Updates," *Poster Session: Seventh Annual Future Faculty and Professionals Symposium (FFPS) in conjunction with The National Consortium for Graduate Degrees for Minorities in Engineering and Science Inc.'s (GEM Consortium) 2005 Annual Board Meeting*, Boston, MA, June 29 – July 1, 2005.
- **T. Toland** and C. Eastman. "Information Retrieval and Information Extraction Applications within a Data Processing Shop," *South Carolina Academy of Science (SCAS)*, Greenwood, SC, April 4, 1999 (Abstract Only).

RESEARCH IN PROGRESS

- **T. S. Toland.** Cloud Computing Framework, **2012 - present**
- **T. S. Toland.** Web Services Framework, **2010 - present**
- **T. S. Toland.** "Simple XML Messaging Framework 2.0," *49th Annual Association for Computing Machinery (ACM) Southeast*, submitted and not accepted 2011, under revision.
- **T. S. Toland.** "Presentation, Reinforce, Evaluate (PRUE): A Pedagogy for a Multi-discipline Degree," *46th Annual Association for Computing Machinery (ACM) Southeast*, submitted and not accepted 2008, under revision.
- **T. Toland**, C. Farkas, and C. Eastman. "An Interval-based Inference Solution," under revision 2006
- **T. S. Toland**, C. Farkas, C. M. Eastman. "Privacy Collaborator: Preventing the Disclosure of Private Information in the Presence of Web Mining," Query Log Analysis: Social and Technological Challenges, A workshop at the 16th International World Wide Web Conference, submitted and not accepted 2007, under revision.

GRADUATE SCHOOL EXPERIENCE

- **Research Assistant**, Center for Information Assurance Engineering (CIAE), University of South Carolina, **Spring 2002 – Spring 2003**
- **Teaching Assistant-Grader**, Computer Science and Engineering, University of South Carolina, (CSCE 350: Data Structures and Algorithms), **Spring 2003**
- **Teaching Assistant-Grader**, Computer Science and Engineering, University of South Carolina, (CSCE 725: Information Retrieval), **Spring 2002**
- **Teaching Assistant**, Computer Science and Engineering, **Fall 2001**
- **Lab Monitor**, Computer Science and Engineering, **Fall 2001**
- **Teaching Assistant-Instructor**, Computer Science and Engineering, University of South Carolina, (CSCE 101: Introduction to Computer Concepts), **Summer I 2001**
- **Teaching Assistant-Grader**, Computer Science and Engineering, University of South Carolina, (CSCE 245: Object-Oriented Programming Techniques), **Spring 2001**

- **Teaching Assistant-Grader**, Computer Science and Engineering, University of South Carolina, (CSCE 350: Data Structures and Algorithms), **Fall 2000**

PROFESSIONAL SERVICES

- **Reviewer**, Journal of Information Security and Applications, **2014** (1 journal)
- **Judge**, “Student Research Presentations,” Association of Computer And Information Science/Engineering Departments at Minority Institutions (ADMI) 2011, Clemson, SC, April 14 – 16, **2011**
- **Reviewer**, National Science Foundation (NSF) Transforming Undergraduate Education in Science, Technology, Engineering, and Mathematics (TUES) Panel Meeting, **July 29-30, 2010**
- **Session Chair**, The Association for Computing Machinery (ACM) Southeast Conference, **2008** (2 tracks)
- **Reviewer**, The Association for Computing Machinery (ACM) Southeast Conference, **2007** (4 papers), **2008** (7 papers), **2010** (5 papers)
- **Committee Member**, The First Computer Security Conference (CSC), Myrtle Beach, SC, April 12 - 13, **2007**
- **Reviewer**, “Creative Activities, Research, and Scholarship Proposals,” The Center of Undergraduate Research & Scholarship, University of South Carolina Upstate, **2005** (3 proposals)
- **Reviewer**, Journal of Database Management, **2004** (1 journal)

PROFESSIONAL AFFILIATIONS

- **Member**, Association for Computing Machinery (ACM) National Chapter
- **Member**, Institute of Electrical and Electronics Engineers, Inc. (IEEE) National Chapter
- **Member**, The International Federation of Information Processing (IFIP) Working Group (WG) 11.3 on Database and Application Security

HONORS AND AWARDS

- **First African-American** to be awarded a Ph.D. in Computer Science from University of South Carolina, **2005**
- **Finalist**, Bank of America - Student Affairs Excellence in Teaching and Advising Award, University of South Carolina Upstate, **2013, 2014**
- **Recipient**, Doc’s List Award for exemplary service to Students, University of South Carolina Upstate, **2007**
- **Second Place**, University of South Carolina Graduate Student Day, **2002**
- Selected by Computer Science and Engineering Department to present research at University of South Carolina Graduate Student Day, **2002**
- **Fellow**, Graduate Assistance in the Area of National Need (GAANN) Fellowship, University of South Carolina, **2000 – 2003**
- **Second Place**, Student Paper Competition, *In the Proceedings of the 38th Annual Association for Computing Machinery (ACM) Southeast Regional Conference*, Clemson, SC, **2000**

- **Recipient**, Outstanding Alumnus for the School of Humanities & Sciences, University of South Carolina Upstate, **1994**
- **Recipient**, Earl Gordon Medal of Honor, **1990**