

Vita
Steven J. Zeil
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Personal Data:

Office Address:

Computer Science Department
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Date of Birth: August 28, 1957
U.S. Citizen

Education:

Thomas More College, B.A. Physics and Applied Mathematics, 1977
Ohio State University, M.S. Computer Science, 1978
Ohio State University, Ph.D. Computer Science, 1981

Employment:

Associate Professor, Old Dominion University. (1988–present)

Research interests include software testing, software reliability, and automatic constraint satisfaction.

Courses taught include programming languages, compilers, software engineering, object-oriented programming, and software testing.

Chair of Undergraduate Curriculum Committee, 1990–1996

Coordinator of Internet-Based Course Delivery, 1998–2003

Distance Learning Coordinator, 2003–present

Chair of Promotion & Tenure Committee, 2002–present

Assistant Professor, University of Massachusetts. (1981–1988) Courses taught include compiler design, software engineering, assembler programming, computer architecture, and numerical analysis. Finalist for University's Distinguished Teaching Award in Fall 1984 and in Spring 1985.

Administrative duties include serving as Graduate Program Director (2 yrs), Graduate Admissions Chair (1 yr), and elected representative to Faculty Senate (5 yrs).

Graduate Research Associate, Ohio State University (1979–1981),

Graduate Teaching Associate (1978–1979), University Fellow (1977–1978).

Research in software testing. Taught courses in data structure and file design, systems analysis, and computer concepts for managers.

Software Engineer, Metcut Research Associates, Cincinnati Ohio (summer 1978), Consultant (1978–1980).

Designed software tools to support development of CAD-CAM systems for jet engine manufacturers.

Research Assistant, Thomas More College Physics Dept. (1975–1977)

Research in magnetic anisotropy of phenyl compounds and in applications of optical anisotropy to frequency modulation of light for communications systems.

Programmer-Operator, Thomas More College Computer Center (1974–1977).

Professional Affiliations and Activities:

Head judge, Mid-Atlantic Region, ACM International Collegiate Programming Contest,

Review panel member for NSF Software Engineering and Languages program, 2003,2004,2007

Steering committee member, ACM Sigsoft *International Symposium on Software Testing and Analysis*, 1997-2007

Review panel member for NSF Small Business Innovative Research program 1998, 2005, 2006, 2007, 2008, 2010

Program Chairman for ACM Sigsoft *International Symposium on Software Testing and Analysis*, August 1995

Review panel member for 1994 NSF Small Business Innovative Research program

Program committee member for *International Symposium on Software Testing and Analysis*, August 1994

Member of Association for Computing Machinery (ACM), IEEE Computer Society, ACM Special Interest Group on Software Engineering, and ACM Special Interest Group on Programming Languages.

Reviewer for NSF, IEEE Transactions on Software Engineering, IEEE Computer, IEEE Software, ACM Transactions on Software Engineering and Methodology, and assorted ACM and IEEE conferences and workshops.

Program committee member for *International Symposium on Software Testing and Analysis*, June 1993

Review panel member for 1989 NSF Research Initiation Awards program

Program committee member for *11th and 12th International Conferences on Software Engineering*, May 1989 (11th), March 1990 (12th)

Grant Support:

DTIC, with K. Maly and M. Zubair, Processes and Tools For Extracting Metadata, 2008-2010, \$84,371

U.S. Govt. Printing Office, with K. Maly and M. Zubair, “Automatic Extraction of Metadata for GPO”, 2008-2009, \$64,906

DTIC, with K. Maly and M. Zubair, Marc21 Representation of Metadata, 2008, \$15,000

DTIC, with K. Maly and M. Zubair, “Automatic Extraction of Metadata for GPO”, 2007, \$84,700

DTIC, with K. Maly and M. Zubair, "Processes and Tools for Extracting Metadata, 2007, \$54,726

DTIC, with K. Maly and M. Zubair, "Tools For Extracting Metadata And Structure From DTIC Technical Documents Collections Using XML Technology, 2007 (continuation), \$16,828

DTIC, with K. Maly and M. Zubair, "Tools For Extracting Metadata And Structure From DTIC Technical Documents Collections Using XML Technology, 2006 (continuation), \$94,000

NASA, with K. Maly and M. Zubair, "Extracting Metadata And Structure From NASA Technical Documents Collections", 2006, \$34,000

DTIC, with K. Maly and M. Zubair, "Tools For Extracting Metadata And Structure From DTIC Technical Documents Collections Using XML Technology, 2005, \$94,000

NSF, "Reliability Growth Modeling from Fault Failure Rates", Sept. 1998 to Feb. 2001, \$59,799

NSF, with K. Maly, C. Wild, M. Overstreet, and H. Abdel-Wahab, "Collaborative Interactive Remote Instruction: Supplement", Feb 1999 to Mar. 2002, \$157,198

NSF, with K. Maly, S. Shen, and M. Zubair, "Planning Grant for the Use of Digital Libraries in Undergraduate Learning in Science", Oct 1998 to Sept. 1999, \$80,355

NASA Langley, with C. Wild, "Aspects of Developing Mission Critical Software Systems", Feb 1996 to Feb 1997, \$123,000

Naval Surface Warfare Center, with C. Grosch and I. Levenstein, "Common High Performance Computing Software Support Initiative Test and Evaluation master plan", June 1996 to Sept. 1996, \$12,600

NASA Langley, with C. Wild, "Engineering Reliable Software Systems", Feb 1994 to Feb 1995, \$123,000

NSF, with C. Wild, "Refinement of Software Test Cases via Accumulated Knowledge", August 16, 1993 to August 15, 1996, \$193,007

NASA Langley, with C. Wild, "Application of Domain Knowledge to Software Quality Assurance", May 16, 1992 to December 31, 1993, \$123,021

NASA Langley, with C. Wild, "Effectiveness of Specification and Implementation Based Testing: A Case Study", May 16, 1991 to May 15, 1992, \$91,500

NASA Langley, with C. Wild, "Software Analysis Testing and Evaluation, with C. Wild, May 16, 1990 to May 15, 1991, \$100,149

NSF, "A Generic Interpretation System", May 16, 1989 to May 15, 1991, \$102,817

NASA Langley, with C. Wild, "Software Analysis Support System", May 16, 1989 to May 15, 1990, \$110,342

RADC, "Investigation and Development of an Advanced Testing System for Ada", with L. A. Clarke and D. J. Richardson, November 1, 1985 to October 31, 1988, \$700,783

RADC, “An ADA Symbolic Testing System”, with L. A. Clarke, January 1, 1985 to December 31, 1985, \$96,176

NSF, “The Development of a Scientific Testing Method”, with L. A. Clarke and D. J. Richardson, August 1, 1984 to July 31, 1987, \$358,923

CDC, “The Development of a Prototype Testing System”, with L. A. Clarke and D. J. Richardson, June 1, 1984 to May 31, 1987, \$100,165

NSF, “Toward the Development of Scientific Testing”, with L. A. Clarke and D. J. Richardson, June 1, 1983 to Nov. 30 1984, \$69,011

NSF, “A Testbed for Evaluating Software Testing Methods,” July 1, 1982 to June 30, 1984, \$39,917

Refereed Publications:

Hui Shi, K Maly, and S Zeil, “Ontology-based Adaptive Reasoning Service for ScienceWeb”, to appear in The Third International Conferences on Advanced Service Computing (SERVICE COMPUTATION 2011), Rome, Italy, Sept. 2011

Ashraf Yaseen, K Maly, S Zeil and M Zubair, “Performance Evaluation of Oracle Semantic Technologies with respect to User Defined Rules”, WEBS 2011, 10th International Workshop on Web Semantics, Toulouse France, August 2011

Hui Shi, K Maly, S Zeil and M Zubair, Comparison of Ontology Reasoning Systems Using Custom Rules, International Conference on Web Intelligence, Mining, and Semantics (WIMS’11), Sogndal, Norway, May 2011

S. Mavram, K Maly, S Zeil and M Zubair, Automated Approach to Cross Linking References for a Large Technical Collection, CD-ROM, ICoASL 2008, New Delhi, Nov. 2008

K Maly, S Zeil and M Zubair, “Metadata Extraction”, Metadata Open Forum, Sydney, Australia, May 2008

P Flynn, L Zhou, K Maly, S Zeil, and M Zubair, “Automated Template-Based Metadata Extraction Architecture”, *Asian Digital Libraries. Looking Back 10 Years and Forging New Frontiers*, Lecture Notes in Computer Science, Springer Berlin / Heidelberg, Volume 4822/2007, pp. 326-336, January, 2008, originally in ICADL 2007, pp. 327-336, Dec. 2007,

K Maly, S Zeil, M Zubair, A Aazhar, A Amrou, N Ratkal, “A Scriptable Statistical Oracle for a Metadata Extraction System”, First International Workshop on Software Test Evaluation (STEV 2007), October 2007

K Maly, S Zeil and M Zubair, “Exploiting Dynamic Validation for Document Layout Classification During Metadata Extraction”, www/Internet 2007, CD-ROM, Vila Real, Portugal, Oct 2007

K Maly, S Zeil, M Zubair, N Ratkal, “A Machine Learning Approach for Automatic Text Categorization: A Case Study for DTIC Collection”, ICSIIT 2007, proceedings, pp. 128-132, Bali, Indonesia, July 2007

- J Tang, K. Maly, S Zeil, and M. Zubair, "Automated Building of OAI Compliant Repository from Legacy Collection", ELPUB 2006, Bansko, Bulgaria, June 2006
- Steven J. Zeil, "AlgAE: Rapid Animation of C++/Java Code", IADIS International Journal on Computer Science and Information Systems, vol 1, no. 1, April 2006
- Steven J. Zeil, "Towards Rapid Animation of C++/Java Code", IADIS MCCSIS eLearning Conference, April 2005
- M. Nelson, K. Maly, S. Zeil, M. Zubair and X. Liu, "Structured Course Objects in a Digital Library", ISDL'99, Tsukuba, Japan, Sept 99
- B. Mitchell and S. J. Zeil, "An Experiment in Estimating Reliability Growth Under Both Representative and Directed Testing", 1998 ACM International Symposium on Software Testing and Analysis, Match 1998, pp 32-41
- B. Mitchell and S. J. Zeil, "Modelling Reliability Growth During Nonrepresentative Testing", *Annals of Software Engineering*, 4, 1997, also available as ODU CS technical report TR-96-04, March 1996
- B. Mitchell and S. J. Zeil, "A Reliability Model Combining Representative and Directed Testing", *18th International Conference on Software Engineering*, March 1996, also available as ODU CS technical report TR-95-18, October 1995
- C. Wild, S. Zeil, J. Chen, and G. Feng, "Employing Accumulated Knowledge to Refine Test Descriptions", *Software Testing, Verification, and Reliability*, volume 2, number 2, July 1992, 53-68
- S. J. Zeil, F. Afifi, and L. J. White, "Detection of Linear Errors via Domain Testing", *ACM Transactions on Software Engineering and Methodology*, volume 1, number 4, October 1992, pp. 422-451
- F. H. Afifi, L. J. White, and S. J. Zeil, "Testing for Linear Errors in Nonlinear Computer Programs", *14th International Conference on Software Engineering*, May 1992, IEEE Computer Society
- L. A. Clarke, A. Podgurski, D. J. Richardson, and S. J. Zeil, "A Formal Evaluation of Data Flow Path Selection Criteria", *IEEE Transactions on Software Engineering*, vol. 15, no. 11, November 1989, pp. 1318-1332
- S. J. Zeil, "Perturbation Techniques for Detecting Domain Errors," *IEEE Transactions on Software Engineering*, vol. 15, no. 6, June 1989, pp. 737-746
- L. A. Clarke, D. J. Richardson, and S. J. Zeil, "TEAM: A Support Environment for Testing, Evaluation, and Analysis", *Proceedings of ACM SIGSOFT '88: Third Symposium on Software Development Environments*, November 1988, pp. 153-162
- S. J. Zeil, "Selectivity of Data-Flow and Control-Flow Path Criteria", *Second Workshop on Software Testing, Verification, and Analysis*, IEEE, July 1988
- S. J. Zeil and E. C. Epp, "Interpretation in a Tool-Fragment Environment", in *Tenth International Conference on Software Engineering*, April 1988, IEEE

- S. J. Zeil, “Complexity of the EQUATE Testing Strategy”, *Journal of Systems and Software*, volume 8, 2, pp. 91–104, March 1988
- L. A. Clarke, A. Podgurski, D. J. Richardson, and S. J. Zeil, “A Comparison of Data Flow Path Selection Criteria”, *Proceedings of the 8th International Conference on Software Engineering*, August 1985, IEEE, pp. 244–251¹
- S. J. Zeil, “Perturbation Testing for Computation Errors”, *Proceedings of the 7th International Conference on Software Engineering*, March 1984, IEEE, pp. 257–265
- S. J. Zeil, “Testing for Perturbations of Program Statements”, *IEEE Transactions on Software Engineering*, SE-9, 3, May 1983, pp. 335–346
- L. J. White, E. I. Cohen, and S. J. Zeil, “A Domain Strategy for Computer Program Testing”, *Computer Program Testing*, B. Chandrasekaran and S. Raduchi (ed.), 1981, North-Holland Press, pp. 103–114
- S. J. Zeil and L. J. White, “Sufficient Test Sets for Path Analysis Testing Strategies”, *Proceedings of the 5th International Conference on Software Engineering*, IEEE, March 1981, pp. 184–191

Selected Other Publications:

- S. J. Zeil, *AlgAE (Algorithm Animation Engine) 2.0 Programmers’ Manual*, ODU CS technical report TR-03-01, March 2001
- S. J. Zeil, “Reliability Growth Modeling from Fault Failure Rates”, *ACM SIGSOFT News*, January 2000
- Guest Editor (with L. Dillon, UCSD), *IEEE Transactions on Software Engineering*, special issue: “Best Papers of the 1996 International Symposium on Software Testing and Analysis”, vol. 22, num. 7, July 1996
- L. A. Clarke, A. Podgurski, D. J. Richardson, and S. J. Zeil, “A Comparison of Data Flow Path Coverage Criteria”, in *Automating Specification-Based Software Testing*, Robert Poston (ed.), IEEE/CS Press, June 1996
- S. J. Zeil (ed.), *Proceedings of the 1996 International Symposium on Software Testing and Analysis*, ACM Press
- S. J. Zeil, “Symbolic Execution and Constraint Satisfaction in Automatic Test Case Generation”, *NIST Users’ Forum on Application Portability Profile (APP) and Open System Environment (OSE)*, May 9, 1995
- S. J. Zeil, “Rootless Age-Based Compacting Garbage Collection Using Reference Counts”, ODU CS technical report TR-93-15, April 1993

¹Received “Influential Paper Award” at 18th *International Conference on Software Engineering*, October 1995, as “judged to have had a significant impact on the field ten years after.”

- S. J. Zeil and C. Wild, “A Knowledge Base for Software test Refinement”, *8th Knowledge-Based Software Engineering Conference*², September 1993, also available as ODU CS technical report TR-93-14
- S. Zeil, A. Biser, L. Cai, H. Huang, T. Ireland, B. Mitchell, and G. Walker, *A Formal Specification of the RSDIMU Inertial Navigation System*, Old Dominion University Technical Report TR-93-06, February 1993
- Jinren Xu and S. J. Zeil, “A Multi-Theory Constraint Satisfaction System”, *21st Annual ACM Computer Science Conference*, February, 1993, pp. 93-99, also available as Old Dominion University Technical Report TR-92-24, November 1992
- D. Eckhardt, M. Jipping, C. Roberts, C. Wild, and S. Zeil, *Open Environments to Support Systems Engineering Integration: A Study Using PCTE, the Portable Common Tool Environment*, Old Dominion University Technical Report TR-92-23, November 1992
- S. Zeil, *A Language Description Package for Ada – (“Norfolk” Ada)*, Old Dominion University Technical Report TR-92-19, November 1992
- S. J. Zeil, “Adding Persistence and Garbage Collection Within Ada”, *Ninth Annual National Conference on Ada Technology*, ANCOST, March 1991
- S. J. Zeil, *A Persistent Heap Abstraction for Ada*, technical report TR-90-41, Old Dominion University, Computer Science Dept., October 1990
- L. A. Clarke and S. J. Zeil, *An Advanced Testing System for Ada: System Description and Design*, Rome Air Development Center, January 1988
- S. J. Zeil, “The EQUATE Testing Strategy”, *Workshop on Software Testing*, July 1986, IEEE-CS and ACM SIGSOFT, pp. 142-151
- S. J. Zeil, *Selecting Sufficient Sets of Test Paths for Program Testing*, Ph.D. dissertation, Ohio State University technical report OSU-CISRC-TR-81-10, October 1981

Recent Invited Talks:

- “Metadata Extraction @ ODU for DTIC”, Sept 19 & 22, 2010, CENDI Teleconference
- “Developing Templates for the Extract Metadata Extraction System”, June 9, 2010, Defense Technical Information Center, Arlington VA

Ph.D. Students:

- Edward Epp, 1992, *An interpreter framework : an experiment in reuse*
- Brian Mitchell, 2001, *A Software Reliability Model Combining Representative and Directed Testing*
- Jianfeng Tang, 2006, (with Maly & Zubair), *Template-based Metadata Extraction for Heterogeneous Collections*

²Best Paper in Conference award