

Premkumar T. Devanbu

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Engineering II, Davis CA 95616 (USA)
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<http://www.cs.ucdavis.edu/~devanbu>

EDUCATION:

Ph.D., 1994, Computer Science, Rutgers University. Thesis: *Software Information Systems*. Advisor: Professor Alex Borgida. (Part-time student since 1984).

M.S., 1979, Computer Science, Rutgers University. Thesis: *Switching System Design & Sorting Algorithms: Some Parallels*. Advisor: Professor Dave Wilkens.

B.Tech., 1977, Electrical Engineering, Indian Institute of Technology, Madras, India.

AREAS OF INTEREST:

Software engineering, open source, empirical software engineering, software quality, software metrics, reverse engineering, program understanding, software security, and middleware.

POSITIONS HELD:

- 2005 (July) - Present *Professor, Department of Computer Science, University of California, Davis, CA 95616.*
- 2000 (July) *Associate Professor, Department of Computer Science, University of California, Davis, CA 95616.*
- 1998-2000 (June) *Assistant Professor, Department of Computer Science, University of California, Davis, CA 95616.*
- 1995-1997 *Principal Member of Technical Staff, Information Systems and Services Research Laboratory, AT&T Laboratories - Research, Murray Hill, NJ.*
- 1984-1995 *Member of Technical Staff, Software and Systems Research Laboratory, AT&T Bell Laboratories, Murray Hill, NJ.*
- 1982-1984 *Member of Technical Staff, Software Systems Laboratory, AT&T Bell Laboratories, Piscataway, NJ.*
- 1979-1982 *Member of Technical Staff, Software Development, Perkin-Elmer Corporation.*

SOFTWARE:

- S.1. **GEN++:** Framework for generating static analyzers for the C++ Language. Based on GENOA (See J.3, below). Available for free download, from <http://seclab.cs.ucdavis.edu/~devanbu/genp>.
- S.2. **Bin2Chall:** A package of software to support the implementation of test coverage verification protocols (See J.8, below). Available for free download, from <http://seclab.cs.ucdavis.edu/~devanbu/bin2chall.cpio.gz>.
- S.3. **Reflex:** Customizable Event Correlation System. Available for free download, <http://reflex.cs.ucdavis.edu>.
- S.4. **PPP:** Peephole Pretty-Printing: incremental, interactive, multiple-font customizable, pretty-printing. Plugins for Eclipse available. <http://peephole>

PUBLICATIONS:

JOURNAL PUBLICATIONS AND BOOK CHAPTERS

- J.1. Rahman, F., Bird, C., Devanbu, P., Clones: What is that smell? accepted to *Empirical Software Engineering, an International Journal* 2011 Springer-Verlag
- J.2. Posnett, D., Bird, C., Devanbu, P., An Empirical Study on the Influence of Pattern Roles on Change-Proneess, *Empirical Software Engineering, an International Journal* 2010 Springer-Verlag
- J.3. Bird, C., Nagappan, N., Devanbu, P., Gall, H., and Murphy, B., Does Distributed Development Affect Software Quality? An Empirical Case Study of Windows Vista, *Research Highlight, Communications of the Association of Computing Machinery*, August, 2009. Revised version of ICSE 2009 paper (see below).
- J.4. Filkov, V., Saul, Z.M., Roy, S., D'Souza, R.M., and Devanbu, P. Modeling and verifying a broad array of network properties *Euro-Physics Letters*, 86 (2009) 28003
- J.5. Jackson, Stoney, Devanbu, P., Ma, K-L., Scalable, Flexible, Pretty Printing, *Science of Computer Programming*, 72(1), June 2008.
- J.6. Wasserman, G, Gould, S., Su, Z., and Devanbu, P, "Static Checking of Dynamically Generated Queries in Database Applications", accepted to *ACM Transactions on Software Engineering*.
- J.7. Wohlstadter E., Devanbu, P., and Jackson, S., "Aspect-Oriented Development of Crosscutting Features in Distributed, Heterogeneous Systems", accepted to *Transactions on Aspect-Oriented Software Development, Springer-Verlag*, 2006
- J.8. Martel, C., Nuckolls G., Devanbu, P., Gertz, M, " A General Model for Authentic Data Publication". *Algorithmica*, Vol. 39, No. 4, 2004.
- J.9. Devanbu, P., Gertz, M., Kwong, A., Martel, C., Nuckols, G., and Stubblebine, S., "Flexible Authentication of XML Documents", *Journal of Computer Security*, Vol. 12 , No. 4, 2004.

- J.10. Gertz, M., Kwong, A., Martel, C., Nuckolls, G., Devanbu, P., and Stubblebine, S., Databases that tell the Truth: Authentic Data Publication *Bulletin of the Technical Committee on Data Engineering*, March 2004, Vol 7, No 1.
- J.11. Devanbu, P., Gertz, M., Martel, C., Stubblebine, S. , "Authentic Third-Party Data Publication", of *Journal of Computer Security*, 11(3), 2003.
- J.12. Devanbu, P., Stubblebine, S., "Stack and Queue Integrity on Hostile Platforms", *IEEE Transactions on Software Engineering.*, January 2002
- J.13. Devanbu, P., Stubblebine, S., Guest Editors Intruction: Software Engineering and Security, *ACM Transactions on Software Engineering and Security*, 2001
- J.14. Devanbu, P., Desert Island Column , Invited guest column for *Journal of Automated Software Engineering* , 2000
- J.15. Devanbu, P.T.; Perry, D.E.; Poulin, J.S. Guest editors introduction: Next generation software reuse *IEEE Transactions on Software Engineering* May 2000
- J.16. Devanbu, P., "Retargetability in Software Tools" *ACM Applied Computing Review*, 2000
- J.17. Devanbu, P., Stubblebine, S., "Cryptographic Verification of Test Coverage Claims", *IEEE Transactions of Software Engineering*, 2000.
- J.18. Cohen, W., Devanbu, P., "Automatically Exploring Hypotheses about Fault Prediction: a Comparative Study of Inductive Logic Programming Methods" *International Journal of Software Engineering and Knowledge Engineering*, Special Issue on "Knowledge Discovery from Software Engineering Data",
- J.19. Devanbu, P., "GENOA: A Language and Front-End independent Source Code Analyzer", *ACM Transactions in Software Engineering*, 1999.
- J.20. Devanbu, P., Frakes W., "Extracting Formal Domain Models from Existing Code for Generative Reuse", *ACM Applied Computing Review*, 1997.
- J.21. Devanbu P., Jones, M. "The Use of Description Logics in KBSE Systems", *ACM Transactions on Software Engineering*, 1997.
- J.22. Devanbu P., Rosenblum, D., Wolf., A. "Generating Testing and Analysis Tools with Aria", *ACM Transactions on Software Engineering*, 1996.
- J.23. Devanbu, P., Litman, D. "CLASP - a Plan Representation and Classification Scheme for a Software Information System", *Artificial Intelligence*, 1996.

- J.24. Devanbu P., "On a Framework for Source Code Search Using Program Patterns", *IEEE Transactions on Software Engineering*, 1995.
- J.25. Devanbu, P., Brachman, R., Selfridge P., Ballard, B., "LaSSIE - a Knowledge-Based Software Information System", special issue of the *Communications of the ACM*, containing the best papers from the *Twelfth International Conference on Software Engineering*, May 1991.
- J.26. Devanbu, P., Selfridge, P., Ballard, B., Brachman, R., "LaSSIE - a Knowledge-Based Software Information System" (Same material as above) also appears in Prieto-Diaz, R., and Arango, G. (eds) *IEEE Tutorial, "Domain Analysis and Software Systems Modeling"*, *IEEE Computer Society Press*, 1991.
- J.27. Belanger, D., Brachman, R., Chen, Y.-F., Devanbu, P., Selfridge P., "Progress towards a Software Information System", *AT&T Technical Journal*; Summer/Fall 1990.
- J.28. Devanbu, P., Selfridge, P., Ballard, B., Brachman, R., "A Knowledge-Based Software Information System", (originally appearing *Proceedings of the International Joint Conference in Artificial Intelligence 89*, Detroit, August 1989), in "Automating Software Design", R. McCartney and M. Lowry (Eds), *MIT Press*; Winter 1990.
- J.29. Agrawal, R., Devanbu, P. "Selections in Linear Least Fixpoint Queries", Special section of *IEEE Transactions on Data and Knowledge Engineering* 1(4), December 1989, featuring the best papers from the *Fourth and Fifth IEEE Conferences on Data Engineering*.

CONFERENCE PUBLICATIONS

Summary: *Some conferences are selective, with rigorous peer review, and archival published proceedings, they are numbered in bold. Acceptance rates shown in parentheses when available.*

- C*.1.** Posnett, D., Devanbu, P., Filkov, V., MIC Check: A Correlation Tactic For ESE Data, *Accepted to MSR 2012 (28%)*
- C*.2.** Hindle, A., Barr, E., Gabel, M., Su, Z., Devanb, P., On the "Naturalness" of software, *Accepted to ICSE 2012 (21%)*
- C*.3.** Barr, E., Bird, C., Rigby, P., Hindle, A., German, G., Devanbu, P., Cohesive and Isolated Development with Branches, *Accepted to FASE 2012 (27%)*

- C.4. Posnett, D., Hindle, A., Devanbu, P., Got Issues? Do New Features and Code Improvements Affect Defects? *WCRE 2011*
- C*.5. Posnett, D., Filkov, V., and Devanbu, P., Ecological Inference in Empirical Software Engineering, *ASE 2011*, (15%) **Winner ACM SIGSOFT Distinguished Paper** and **Best paper of ASE 2011** awards.
- C*.6. Rahman, F., Posnett, D., Barr, E., Hindle, A., Devanbu, P., BugCache for Inspections: hit or miss? *FSE 2011*, (17%) **Nominated for ACM SIGSOFT Distinguished Paper Award**
- C*.7. Bird, C., Nagappan, N., Murphy, B., Gall, H., Devanbu, P., Don't Touch My Code! Examining the Effects of Ownership on Software Quality *FSE 2011*, (17%)
- C*.8. Rahman, F., and Devanbu, P., Ownership, Experience and Defects: A fine-grained study of Authorship *ICSE 2011* (14%)
- C.9. Posnett, D., Hindle, A., Devanbu, P., A Simpler Model of Software Readability *MSR 2011* (30%).
- C.10. Wang, X., Baik, E., Devanbu, P., Operating System Compatibility Analysis of Eclipse and Netbeans, based on bug data, *MSR Mining Challenge 2011*.
- C*.11. Bachmann, B., Bird, C., Rahman, F., Devanbu, P., Berstein, A., The Missing links: bugs and bug-fix commits, *SIGSOFT FSE 2010* (20%)
- C.12. Nia, R., Bird, C., Devanbu, P., Filkov, V., Validity of Network Analyses in Open Source Projects. *MSR 2010* (31%)
- C.13. Rahman, M.F., Bird, C., Devanbu, P., Clones: What is that Smell? **Best Paper Award**, *MSR 2010* (31%)
- C.14. Posnett, D., Bird, C., Devanbu, P., Thex: Mining Metapatterns in Java. *MSR 2010* (short paper) (31%)
- C*.15. Bird, C., Nagappan, N., Devanbu, P., Gall, H., and Murphy, B., Putting it All Together: Using Socio-Technical Networks to Predict Failures, *ISSRE 2009* (19%)
- C*.16. Bird, C., Bachmann, A., Aune, E., Duffy, J., Bernstein, A., Filkov, V., Devanbu, P., Fair and Balanced? Bias in bug-fix datasets, *SIGSOFT ESEC-FSE 2009*. (15%)

- C.17. Bird, C., Rigby, P., Barr, E., Hamilton, D., German, D., and Devanbu, P. The Promises and Perils of Mining Git *Proceedings, Sixth IEEE International Working Conference on Mining Software Repositories (30%) 2009*
- C*.18. Bird, C., Nagappan, N., Devanbu, P., Gall, H., and Murphy, B., Does Distributed Development Affect Software Quality? An Empirical Case Study of Windows Vista *ICSE 2009, Proceedings (to appear)*. (12%) **ACM SIGSOFT Distinguished Paper, also invited to appear in CACM Research Highlights.**
- C*.19. Bird, C., Barr, E., Nash, A., Devanbu, P., Filkov, V., Su, Zhendong, Structure and Dynamics of Research Collaboration in Computer Science, *Proceedings, SIAM International Conference on Data Mining 2009*.
- C*.20. Bird, C., Pattison, D., De Souza, R., Filkov, V., and Devanbu, P., Community Structure in Open-source Developer Social networks, *ACM SIGSOFT FSE 2008 Proceedings, 2008*. (20%)
- C*.21. Shroff, G., Agrawal, P., Devanbu, P., Instant Multi-Tier Web Applications without Tears. *Indian Software Engineering Conference 2009 (13%)*
- C*.22. Pattison, D., Devanbu, P., Gertz., M. Talk and work: a preliminary report *MSR '08: Proceedings of the 2008 international workshop on Mining software repositories, (short paper) 2008*.
- C*.23. Alonso, O., Bird, C., Devanbu, P., Expertise identification and visualization from CVS *MSR '08: Proceedings of the 2008 international workshop on Mining software repositories, (short paper) 2008*.
- C*.24. Michael Ogawa, Kwan-Liu Ma, Christian Bird, Premkumar T. Devanbu, Alex Gourley: Visualizing social interaction in open source software projects. *APVIS 2007*
- C*.25. Saul, Z., Filkov, V., Devanbu, P, and Bird, C. "Recommending Random Walks" *Proceedings of the 2007 ACM ESEC/SIGSOFT Foundations of Software Engineering Conference Nominated for ACM SIGSOFT Distinguished Paper Award (17%)*
- C.26. Bird, C., Gourley, A., Devanbu P, Swaminathan, A., and Hsu, G. "Open Borders? Immigration in Open Source Projects", *Proceedings of the 2007 ICSE International workshop on Mining software repositories (38%)*
- C.27. Bird, C., Gourley, A., Devanbu P, Swaminathan, A., and Hsu, G. "Detecting Patch Submission and Acceptance in OSS Projects", *Proceedings of the 2007 ICSE International workshop on Mining software repositories (Short paper)*

- C*.28. Demir, O, Devanbu, P, Wohlstadter, E., Tai, S, "Aspect-oriented approach to bypassing in Middleware" *Proceedings of the 2007 Aspect-oriented Software Development Conference*, (18%)
- C.29. Bird, C., Gourley, A., Devanbu, P., Swaminathan, A., and Gertz, M., "Mining E-mail Social Networks", *Proceedings of the 2006 ICSE International workshop on Mining software repositories* (31%)
- C.30. Demir, O.E., Devanbu, P., Wohlstadter, E., and Tai, S., Optimizing Layered Middleware, *SEM '05: Proceedings of the 5th international workshop on Software engineering and middleware*, 2005.
- C.31. Gould, C.R., Su, Z., Devanbu, P.T., JDBC Checker: A Static Analysis Tool for SQL/JDBC Applications. Research Demonstrations Track, *ICSE 2004*
- C.32. Wohlstadter, E., Jackson, S., Devanbu, P.T: Design and Implementation of Distributed Crosscutting Applications, Research Demonstration Track, *ICSE 2004*.
- C*.33. Gould, C.R., Su, Z., Devanbu, P., "Static Checking of Dynamically Generated Queries in Database Applications", *ICSE 2004*, Edinburgh, UK. (13%). *ACM SIGSOFT Distinguished Paper*
- C*.34. Wohlstadter, E., Tai, S., Thomas, A., Rouvellou, I., Devanbu P., "GlueQoS: Middleware to Sweeten Quality-of-Service Policy Interactions", *ICSE 2004*, Edinburgh, UK. (13%)
- C.35. Alonso, O., Gertz. M., Devanbu, P., Database Techniques for the Analysis and Exploration of Software Repositories *MSR '04: International Workshop on Mining Software Repositories*, Edinburgh, UK, 2004.
- C.36. Dahlgren, T., Devanbu, P. Adaptable Assertion Checking for Scientific Software Components, *International Workshop on Software Engineering for High Performance Computing System Applications*, Edinburgh, UK 2004.
- C.37. Wohlstadter, E., Devanbu, P., "DADO: a novel programming model for distributed, heterogeneous, late-bound QoS implementations", *Proceedings, Workshop on Secure Reliable Middleware (SRM)* , Catania, Italy, 2003.
- C*.38. Devanbu, P., Gertz, M., Toone, B., "Static type-inference for Trust in Distributed Information Systems", *Tenth International Conference on Co-operative Information Systems (COOPIS)*, Catania, Italy, 2003. (23%)

- C*.39. Toone, B., Gertz, M., Devanbu, P., "Trust Mediation for Distributed Information Systems", *Eighteenth International Information Security Conference*, 2003, (27%)
- C*.40. Wohlstadter, E., Jackson, S., Devanbu, P., "DADO: Enhancing middleware to support cross-cutting features in distributed, heterogeneous systems", *ICSE 2003* (13%) *Nominated for the ACM SIGSOFT Distinguished paper*
- C.41. Premkumar T. Devanbu, Bob Balzer, Don S. Batory, Gregor Kiczales, John Launchbury, David Lorge Parnas, Peri L. Tarr: Modularity in the New Millennium: A Panel Summary. *ICSE 2003*
- C.42. Wohlstadter, E., Toone, B., and Devanbu, P., A Framework for Flexible Evolution in Distributed Heterogeneous Systems, *International Workshop on Principles of Software Evolution*, 2002.
- C.43. Jackson, S., Devanbu, P., Splicing Views for Programmers, *OOPSLA Workshop on Software Visualization*, 2001.
- C.44. Devanbu, P., and Wohlstadter, E., Managing Evolution in Distributed Heterogeneous Systems, *NFS Workshop on New Visions for Software Design and Productivity: Research and Applications*, 2001.
- C.45. Wohlstadter E., Keen, A., Jackson, S., Devanbu, P., "Accommodating Evolution in AspectJ" *Workshop on Advanced Separation of Concerns, OOPSLA 2001*
- C*.46. Devanbu, P., Gertz, M., Kwong, A., Martel, C., Nuckols, G., and Stubblebine, S., "Flexible Authentication of XML Documents", *ACM Conference on Computer and Communications Security*, 2001, (17%) Philadelphia, USA.
- C.47. Knight, J., D. Heimbigner, A. Wolf, A. Carzaniga, J. Hill, and P. Devanbu, "The Willow Survivability Architecture". *Proc. of the Fourth Information Survivability Workshop*, 2001
- C.48. Keen, D., Chong, F., Devanbu, P., Farrens, M., Brown, J., Hollfelder, J., and Zhuang, X., "Memory issues in hardware-supported software safety" *ISCA 2001 Workshop on Memory Performance issues*, Goteborg, Sweden.
- C.49. Wohlstadter, E., Devanbu, P., "A Lazy approach to modeling higher-order connectors", *ICSE 2001 Workshop on Advanced Separation of Concerns in Software Engineering*, Toronto, Canada.

- C*.50. Wohlstadter, E., Jackson, S., Devanbu P., "Generating Wrappers for Command-line Programs: The Cal-Aggie Wrap-O-Matic project." *Proceedings, ICSE 2001 (18%)*, Toronto, Canada
- C.51. Devanbu, P., Gertz, M., Martel, C., Rogaway, P., Stubblebine, S.G., "Authentic Re-Publication by Untrusted Servers: A Novel Approach to Database Survivability", *Third IEEE Information Survivability Workshop (ISW-2000)*, 2000.
- C.52. Wolf, A., Heimbinger, D., Carzaniga, A., Knight, J., Devanbu, P., Gertz, M., "Bend, Don't Break: Using Reconfiguration to Achieve Survivability", *Third IEEE Information Survivability Workshop (ISW-2000)*, 2000
- C*.53. Devanbu, P., Gertz, M., Martel, C., Stubblebine, S., "Authentic Third-Party Data Publication", *Fourteenth IFIP 11.3 Conference on Database Security*, 2000, (42%)
- C.54. Devanbu, P., Stubblebine, S., Uschold M., "The Next Revolution: Free, Full, Open Person-2-Person (P2P) E-commerce" *TWIST-2000: The workshop on Internet-Scale Technologies*, Irvine, CA, 2000.
- C.55. Devanbu P., Stubblebine, S., "Security and Software Engineering: A Roadmap", *Twenty-second International Conference on Software Engineering*, 2000.
- C*.56. Borgida, A., Devanbu, P. "Adding more DL to IDL: towards more Knowledgeable Component Inter-Operability", *Twenty-first International Conference on Software Engineering*, 1999. (17%).
- C*.57. Devanbu, P., Chen, Y-F., Gansner, E, Muller, H., Martin, J., "Chime - Customizable Hyperlink Insertion and Maintenance Engine for Software Engineering Environments", *Twenty-first International Conference on Software Engineering*, 1999. (17%).
- C.58. Malabarba, S., Devanbu P., Stearns, A., "MoHCA-JAVA—A tool to support C++ to Java Conversion", Reviewed Research Demonstration Track, *Twenty-first International Conference on Software Engineering*, 1999.
- C.59. Sitaraman, M., Davis, M., Devanbu, P., Poulin, J., Ran A., Weide B., "Reuse Research: Contributions, Problems and Non-Problems", *ACM Symposium on Software Reuse*, 1999. (Invited panel summary).
- C.60. P. Devanbu, M. Gertz, S. Stubblebine. "Security for Automated, Distributed Configuration Management", *Proceedings, ICSE 99 Workshop on Software Engineering over the Internet*, 1999.

- C.61. Sant'anna. M., Leite, J., Baxter, I., Wile, D., Biggerstaff, T., Batory, D., Devanbu, P., Burd L., "International Workshop on Software Transformation Systems (STS'99)", *Twenty-first International Conference on Software Engineering* 1999. (Invited workshop summary).
- C*.62. Devanbu, P., Stubblebine, S., "Stack and Queue Integrity on Hostile Platforms", *IEEE Symposium on Security and Privacy*, 1998. (17%).
- C*.63. Devanbu P., Fong, P., Stubblebine, S. "Techniques for Trusted Software Engineering" *Twentieth International Conference on Software Engineering*, 1998. (19%)
- C*.64. Devanbu P., Stubblebine S., "Research Directions for Automated Software Verification: Using Trusted Hardware", *Conference on Automated Software Engineering*, 1997. (29%).
- C*.65. Devanbu P., Stubblebine, S., "Cryptographic Verification of Test Coverage Claims", *Fifth ACM SIGSOFT Conference on the Foundations of Software Engineering*, 1997. (14%).
- C*.66. Cohen, W., Devanbu, P., "A Comparative Study of Inductive Logic Programming Methods for Software Fault Prediction", *Fourteenth International Conference on Machine Learning*, 1997. (34%).
- C*.67. Briand L., Devanbu, P., Melo, W., "An Investigation into Coupling Measures for C++", *19th International Conference on Software Engineering*, 1997. (19%).
- C.68. Devanbu, P., "Research Issues in Software Development with Distributed Objects", *Second OOPSLA workshop on distributed objects and the World Wide Web*, <http://www.eng.uci.edu/~peilei/index.html> 1996.
- C*.69. Devanbu, P., Karstu, S., Melo, W., Thomas, D. "Analytical and Empirical Validation of Reuse Benefit Measures", *18th International Conference on Software Engineering*, 1996. (24%).
- C.70. Devanbu, P., Karstu, S., "Measuring the Benefits of Software Reuse", *Workshop on Institutionalizing Software Reuse*, 1995.
- C*.71. Devanbu, P., Rosenblum, D., Wolf, A., "Automated Construction of Testing and Analysis Tools", *16th International Conference on Software Engineering*, 1994. (11%).
- C*.72. Devanbu, P., Jones, M. "The Use of Description Logics in KBSE Systems", *16th International Conference on Software Engineering*, 1994. (11%).

- C.73. Devanbu, P., "Research issues in Applications Generators", *Workshop on Institutionalizing Software Reuse*, 1993.
- C*.74. Devanbu, P., "Translating Description Logics into Information Server Queries", *Second International Conference on Information and Knowledge Management*, 1993. (43%).
- C.75. Borgida, A., Devanbu, P., "Knowledge Base Management Systems using Description Logics and their role in Software Information Systems" (invited paper), *Information Processing 92 (Vol.3)*, pp.171–181, Elsevier Science Publishers, 1992.
- C.76. Devanbu, P. "Terminological Languages in Software Information Systems", in the *International Workshop on Uses of Terminological Logics* , .
- C.77. Devanbu, P. "Knowledge Based Software Information Systems", in the *Workshop on Applying Artificial Intelligence to Software Problems: Assessing Promises and Pitfalls*
- C*.78. Devanbu, P. "GENOA- a language and front-end independent source code analyzer generator", *14th International Conference on Software Engineering*, 1992. (12%). **Nominee and first-runner up for ICSE 2002 Ten-year most influential paper award.**
- C.79. Devanbu, P. "Knowledge Acquisition for Reuse", in the *First International Workshop on Software Reuse*, 1991.
- C*.80. Devanbu, P., Litman, D., "Plan-Based Terminological Reasoning", *Second International Conference on Principles of Knowledge Representation*, Boston, Mass., 1991. (27%).
- C*.81. Devanbu, P., Brachman, R., Selfridge P., Ballard, B., "LaSSIE - A Classification-Based Software Information System". *Twelfth International Conference on Software Engineering*, 1990. (10%).
- C.82. Devanbu, P. "Re-Use of Software Knowledge: a Progress Report", in *Workshop on Institutionalizing Software Reuse*, 1990.
- C.83. Brachman, R., Devanbu, P., "Domain Modeling in a Software Information System" Proceedings, *Domain Modeling Workshop*, in conjunction with OOP-SLA '89 1989.
- C.84. Devanbu, P., Brachman, R., "Inference in Support of Retrieval for Re-Use in Large Software Systems", *Workshop on Institutionalizing Software Reuse*, 1989.

- C*.85. Devanbu, P., Selfridge, P., Ballard, B., Brachman, R., "A Knowledge-Based Software Information System", Proceedings of the *Ninth International Joint Conference in Artificial Intelligence*, 1989. (21%).
- C*.86. Agrawal, R., Devanbu, P., "Moving Selections into Linear Least Fixpoint Queries", *Proceedings, Fourth International Conference on Data Engineering*, 1988. (31%).
- C*.87. Devanbu, P., Freeland, M., Naqvi, S., "A Procedural Approach to Search Control in Prolog" *Proceedings, European Conference on Artificial Intelligence*, 1986. (24%).

GRADUATE STUDENTS:

Note: I began advising graduate students and Post-Docs starting with first faculty appointment at UC Davis, in 1998.

Name	Degree	Role	Years	Current Position, if Known
Howard Louie	M.S	Co-Advisor	1999-2000	JD, Patent Attorney
Kimberly Knowles	M.S.	Advisor	1998-2000	Graduated
Ricardo Anguiano	M.S	Advisor	2000-2002	Graduated
Eric Wohlstadter	M.S., Ph.D	Advisor	1999-2004	Assoc. Professor, UBC, Vancouver
Brian Toone	M.S., Ph.D	Co-Advisor	2000-2004	Assoc. Professor, Samford University
Stoney Jackson	M.S., Ph.D	Advisor	2000-2004	Assoc. Professor, Western New England College
Tammara Dahlgren	Ph.D	Committee	2002-2008	Scientist, LLNL.gov
Derrick Pallas	M.S.	Co-Advisor	2003-2005	Graduated
Omer Demir	Ph.D	Advisor	2004- 2007	Google.com
Alex Gourley	Undergraduate	Advisor	2005-2007	Krugle.com
Zach Saul	Ph.D	Co-Advisor	2006-2008	Retronyms.com
Yu Wang	M.S.	Advisor	2006 - 2007	Graduated
Chris Bird	Ph.D	Advisor	2005- 2010	Researcher, Microsoft Research
Bharathi Seshadri	M.S.	Advisor	2008 -2009	Cisco
Daryl Posnett	Ph.D.	Advisor	2007 -	Current
Amrinder Singh	M.S.	Advisor	2009 - 2010	Nvidia
Foyzur Rahman	Ph.D.	Advisor	2009 -	Current
Dr. Abram Hindle	Post-Doc	Supervisor	2010 -2011	Asst. Professor, Univ. of Alberta
Dr. Earl Barr	Post-Doc	Co- Supervisor	2010 -	Current
Ming Xiao	Ph.D.	Advisor	2011 -	Current
Rachel Aurand	M.S.	Advisor	2011 -	Current
Stephen Raymond	M.S.	Advisor	2011 -	Current

PROFESSIONAL ACTIVITIES:

1. Keynote, International Workshop on Principles of Software Evolution, Szeged, Hungary, 2011.
2. Keynote, PASED Summer School on Empirical Software Engineering, Montreal, Canada, 2011
3. Program Committee, *ICSE* 2011.
4. Invited Plenary Talk, *Empirical Software Engineering Conference*, Bolzano, Italy, 2010.
5. Keynote, *International Conference on Software Engineering and Data Engineering*, San Francisco, USA, 2010.
6. Keynote, *Ascona Workshop on Mining Software Repositories*, Ascona, Switzerland, 2010.
7. Associate Editor, *Wiley Journal of Software Maintenance & Evolution, Research & Practice*, 2010-present.
8. Associate Editor, *Springer-Verlag Empirical Software Engineering Journal*, 2009-present.
9. Program Chair (with Seb Uchitel) for *ICSE 2010*, planned for Capetown, South Africa.
10. Associate Editor, *IEEE Transactions on Software Engineering*, 2006-2010.
11. Keynote, *Working Conference on Reverse Engineering*, Antwerp, Belgium, 2008
12. Program Committee, *ACM SIGSOFT FSE*, 2008
13. Program Committee, *ACM SIGSOFT FSE/ESEC*, 2007
14. Program Chair, *ACM SIGSOFT Foundations of Software Engineering*, 2006.
15. Associate Editor, *ACM Transactions on Software Engineering*, 2002-2005
16. Reviewer, National Science Foundation Panels, including regular, ITR, SoD, and SBIR panels, 2000, 2001, 2002, 2003, 2004, 2005, 2007.
17. Guest Editor, *ACM Transactions on Software Engineering*, Special issue on Software Engineering and Security.

18. Guest Editor, *IEEE Transactions on Software Engineering*, Special issue on Software Reuse.
19. Program Committee, *ACM SIGSOFT Conference on Foundations of Software Engineering*, 2005.
20. Program Committee, *ACM Middleware*, 2004.
21. Program Committee, *ACM SIGSOFT Conference on Foundations of Software Engineering*, 2004.
22. Program Committee, *Twenty-Sixth International Conference on Software Engineering*, 2004.
23. Program Committee, *Twenty-Fifth International Conference on Software Engineering*, 2003.
24. Program Committee, *Twenty-Fourth International Conference on Software Engineering*, 2002.
25. Program Committee, *ACM SIGSOFT Conference on Foundations of Software Engineering*, 2002.
26. Program Committee, *ACM SIGSOFT Conference on Foundations of Software Engineering*, 2001.
27. Co-Chair (with Prof. J. Mylopoulos), Workshops Committee, *Twenty-Third International Conference on Software Engineering*, 2001.
28. Invited Keynote Speaker, International Workshop on Description Logics (DL 2000), Aachen, Germany.
29. Program Committee, *Twenty-Second International Conference on Software Engineering*, 2000.
30. Program Committee, *ACM SIGSOFT Conference on Foundations of Software Engineering*, 2000.
31. Program Committee, *Twenty-first International Conference on Software Engineering*, 1999.
32. Panel Participant, "Reuse research: contributions, problems and non-problems", ACM Symposium on Software Reuse, 1999.

33. Program Committee, *Twentieth International Conference on Software Engineering*, 1998.
34. Program Co-Chair, *Fifth International Conference on Software Reuse*, 1998.
35. Program Committee of the *IEEE International Conferences on the Engineering of Complex Computer Systems*, 1996, 1997.
36. Advisory and Program Committees of the *International Conference on Software Reuse*, Orlando, 1993, 1994, 1996, 2000.
37. Program Committee of the *Working Conferences on Reverse Engineering*, 1995, 1996, 1997, 1998, 1999.
38. Program Committee of the *Workshops on Program Comprehension*, 1995, 1996, 1997, 1998, 1999.
39. Program Committee of the *Sixth Knowledge-Based Software Engineering Conference*, 1996.
40. Frequent Reviewer for *IEEE Transactions on Software Engineering* and *ACM Transactions on Software Engineering and Methodology*.
41. Reviewer for *Journal of the ACM*.
42. Reviewed grant and project proposals from Canadian National Research Council, and Office of Technology Assessment (DOD).
43. Presented a tutorial survey on "Generative Methods of Software Reuse" at the *International Conferences on Software Reuse*, 1994, 1996.
44. Panel on the "Relative benefits of generative and object-based reuse" (with Ira Baxter, Jim Neighbors, and Bjarne Stroustrup) *International Conference on Software Reuse*, Orlando, 1996.
45. Panel on Program Understanding, at the *Seventh Annual Knowledge-Based Software Engineering Conference*, Washington, DC, September 1992
46. Panel on Domain Modeling, at the *Sixth Annual Knowledge-Based Software Engineering Conference*, Syracuse, NY., September 1991
47. Invited Speaker at Second Workshop on Domain Modeling, in conjunction with *Thirteenth International Conference on Software Engineering*, Austin TX., May 1991.

Intramural Service:

- **Departmental Service:** Industrial Relations Committee (1998-1999), Undergraduate Affairs Committee (1998-2001), Accreditation Co-ordinator, (1999-2001), Recruiting Committee (2000-2001,2007), Visibility Committee, (Founding Chair) (2001-2002), Recruiting Committee Chair (2004-2006). Graduate Admission Committee Chair (2007).
- **College Level:** Program Planning and Assessment Committee, College of Engineering Executive Committee.
- **University Level:** Alternate departmental representative, Representative Assembly of the Academic Senate, Committee on Privilege & Tenure, Academic Senate.
- **Extramural:** ACM SIGSOFT representative to the Curriculum Undergraduate Curriculum Committee on Software Engineering (2001-2002).

Invited colloquia:

In 2011: IBM Research, Bangalore, Singapore Management University, National University, Singapore. *In 2010:* University of Texas, Dallas, North Carolina State University, Microsoft Research, USA. *In 2009:* Iowa State University, Microsoft Research India, Universidad Rey Juan Carlos III, Brigham Young University. *In 2008:* University of Zurich, University of Lugano. *In 2007:* Iowa State University, Accenture. *In 2004:* Fudan University, Shanghai, China; Chinese Academy of Science, Beijing, China. *In 2003:* University of Texas, Austin; AT&T Labs—Research, NJ; University of California, Irvine; University of Lincoln, Nebraska. *Prior years:* Chiang Mai University, Thailand; Indian Institute of Technology, Madras; Oracle Corporation, Center for Research in Information Science (CRIM), Montreal; University of Montreal; University of Toronto; University of Oregon; Oregon State University; University of Maryland; IBM Yorktown Heights Research Facility; Microsoft Research; George Mason University; Software Productivity Consortium; Hewlett Packard Laboratories; UNISYS Paoli Research Centre; Washington State University; Rutgers University.

Funding:

Note: I have no research funding prior to 1998, when I first took an academic position; hence all the grants/gifts listed below began after 1998. Grants on which I was PI are listed first, ordered earliest first.

1. PI, \$37,000 Gift, from Microsoft Research to support research into static analysis (1998).
2. PI, \$15,000 Gift, from Hewlett-Packard Laboratories to support research into distributed configuration management, and \$9,750 matching funds from the University of California MICRO Program (1999). (Co-PI: Michael Gertz)
3. PI, \$52,766 grant, NSF “SGER: a Framework debugging domain-specific languages” (1998-2000).
4. PI, \$249,446, DARPA Subcontract, “Secure Mediation”, sub-contract to University of Colorado (2000-2003). (Co-PI: Michael Gertz)
5. PI, \$786,465, NSF, “ITR: Scalable and Secure Information Re-publication”, (Co-PIs: Michael Gertz, Chip Martel, Phillip Rogaway), (2000-2003)

6. PI, \$150,000, NSF, "Managing evolution in distributed, heterogeneous systems" (2002-2005)
7. PI, \$40,000, IBM Faculty Partnership Award. (Gift from IBM corporation) "Building Adaptable Systems". (2004)
8. PI, \$131,000, NSF, "Mining Problem-solving Behaviour from Open-Source Respositories". (2005-2007)
9. PI, \$750,000, NSF, "SoD-TEAM: Longitudinal effects of Design in Open Source Projects", (2006-2010)
10. PI, \$20,000, IBM Faculty Partnership Award. (2009-2010)
11. PI, \$700,118, "SHF: Medium: How Do Static Analysis Tools Affect End-User Quality" (2010-2014)
12. PI, \$10,000 Gift, Microsoft Research (2010-2011)
13. Co-PI, \$130,000 sub-contract to Boeing (DARPA funding) "Multi-Community Cyber Defense", (1999-2001). (Co-PI: Michael Gertz)
14. Co-PI \$366,800, NSF, "ITR: Improving System Functionality using monitoring processors", (PI: Matt Farrens, and Co-PI: Fred Chong) (2001-2004)
15. Co-PI \$170,000, NSF " CISE Research Resources: Infrastructure for Research in Parallel and Distributed Computing" (2002-2004), (PI: Raju Pandey; CoPIs: Demet Aksoy, Ron Olsson)
16. Co-PI, \$698,621, AFOSR, "Structure and Function of Task-Oriented Social Networks".
(PI: Vladimir Filkov; Co-PIs: Raissa D'Souza, Diane Felmlee).

Patents and Awards:

1. United States Patent No. 5,826,256. Issued 10/20/1998. *Apparatus and methods for source code discovery.*, (Assignee: Bell Laboratories/Lucent Technologies).
2. United States Patent No. 5,832,271. Issued 11/3/1998. *Determining dynamic properties of programs.*, (Assignee: Bell Laboratories/Lucent Technologies).

3. United States Patent No. 5,909,577. Issued 6/1/1999. *Determining dynamic properties of programs* (Uses a different realization than that used in No. 5,832,271). , (Assignee: Bell Laboratories/Lucent Technologies).
4. United States Patent No. 6,098,170. Issued 8/1/2000. *System and method for using a second resource to store a data element from a first resource in a first-in first-out queue*, (Continued as 6,237,094, issued May 22, 2001) (Assignee: AT&T Corporation)
5. United States Patent No. 6,101,603. Issued 8/8/2000. *System and method for using a second resource to store a data element from a first resource in a first-in first-out stack*, (Continued as 6,249,871, issued June 19, 2001) (Assignee: AT&T Corporation)
6. United States Patent No. 6,148,401. Issued 11/14/2000, *System and method for providing assurance to a host that a piece of software possesses a particular property*, (Assignee: AT&T Corporation) (Continued as 6,381,698, issued April 30, 2002)
7. United States Patent No. 6,681,371, Issued 01/20/2004, *System and method for using container documents as multi-user domain clients* , *Assignee: AT&T Corporation*.
8. National Merit Scholar, Govt. of India. (1971-1977).
9. AT&T Bell Labs Doctoral Support Scholar, Fall 1990 - Spring 1994.
10. ICSE 92 paper on GENOA: nominee and first runner-up, ICSE 2002 "Ten-year Best Paper Award".
11. ICSE 2003 paper on DADO: one of six nominees for an ACM Distinguished Paper Award.
12. ICSE 2004 paper on the JDBC checker: winner of an ACM Distinguished Paper Award.
13. ICSE 2007 paper on Coupling Metrics: nominee, ICSE 2007 "Ten-year Best Paper Award".
14. ESEC/FSE 2007 paper on recommender systems, nominee for an ACM SIG-SOFT Distinguished Paper Award.

15. *ICSE 2009* paper on distributed development, ACM Distinguished Paper award, also the first software engineering paper to appear in *CACM Research Highlights*.
16. *MSR 2010* Best paper award.
17. *ESEC/FSE 2011*, paper on the evaluation of FixCache: nominee for ACM SIGSOFT Distinguished Paper
18. *ASE 2011*, paper on Ecological Inference in Empirical Software Engineering, Best paper award.
19. *ASE 2011*, paper on Ecological Inference in Empirical Software Engineering, ACM SIGSOFT Distinguished Paper award.

Teaching:

1. Nominated for the ASUCD (Associated Students of UC Davis) Distinguished Teaching award, 2011.
2. Introduction to Programming (ECS 30) Freshman Basic C programming, enrollments up to 200.
3. Undergraduate Software Engineering (ECS 160). (Typically offered twice a year) A core software-engineering class, including a major design project. Concepts emphasized include object-oriented software engineering, teamwork, web service construction and design. A high-demand class, required for CS&E majors, with enrollments occasionally exceeding 100. My teaching ratings are generally around 8/10, indicating a high level of student acceptance.
4. Graduate Software Engineering (ECS 260). (Typically offered once a year) Lecture and project class emphasizing advanced programming techniques and component-based technologies. . My teaching ratings are around 9/10, indicating excellent student acceptance.
5. Seminar on Open Source and Empirical Software Engineering (ECS 289x) . Occasional small-enrollment advanced graduate seminar.