

Audris Mockus

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Personal

Born July 14, 1964; in Kaunas, Lithuania
Lithuanian Citizen; US permanent resident

Education

Ph.D. (Statistics), 1994, Carnegie Mellon University
M.S. (Statistics), 1991, Carnegie Mellon University
B.S. & M.S. (Automatic Control), 1988,
Moscow Institute of Physics and Technology

Positions

Department of Electrical Engineering and Computer Science, University of Tennessee,
Knoxville, TN 2014- the Harlan D. Mills Chair Professor

Avaya Labs Research,
Basking Ridge, NJ 2001-2016 Consulting Research Scientist

Bell Laboratories, Software Production Research Department,
Naperville, IL 1995-2001 Member of Technical Staff

Carnegie Mellon University, Dept. of Statistics,
Pittsburgh, PA 1994-1995 Visiting Assistant Professor

Carnegie Mellon University, Dept. of Statistics,
Pittsburgh, PA 1990-1994 Teaching and Research Assistant

Institute of Mathematics and Informatics,
Vilnius, Lithuania 1988-1990 Research Fellow

Kaunas University of Technology,
Kaunas, Lithuania 1989-1990 Teaching Assistant

Computer Center of the Academy of Sciences of the U.S.S.R.,
Moscow, Russia 1985-1988 Research Assistant

Recognition

Honorable Mention, Most Influential Paper Award of International Conference on Software Engineering 2001. Awarded in 2011.

Most influential paper of International Conference on Software Engineering 2000. Selected by a specially constituted committee of ICSE 2010 using a range of indicators of influence, impact, and significance.

Mining Software Repositories, 2014, distinguished paper award.

Foundations of Software Engineering, 2010, distinguished paper award.

Ranked ninth on the list of the top software engineering scholars in the peer reviewed article in Communications of the Association of Computing Machinery, 2007.

First International Workshop on Emerging Trends in FLOSS Research and Development, 2007, best paper award.

International Conference on Software Engineering, 2000, best paper award.

International Conference on Software Maintenance, 2000, best paper award.

Articles in Refereed Proceedings

1. Jiaxin Zhu, Minghui Zhou, and Audris Mockus. Effectiveness of code contribution: From patch-based to pull-request-based tools. In *Proceedings of the 2016 24th ACM SIGSOFT International Symposium on Foundations of Software Engineering*, FSE 2016, pages 871–882, New York, NY, USA, 2016. ACM.
2. Tapajit Dey, Jacob Logan Massengill, and Audris Mockus. Analysis of popularity of game mods: A case study. In *Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play Companion Extended Abstracts*, CHI PLAY Companion '16, pages 133–139, New York, NY, USA, 2016. ACM.
3. Nathan Wilder, Jared M. Smith, and Audris Mockus. Exploring a framework for identity and attribute linking across heterogeneous data systems. In *Proceedings of the 2Nd International Workshop on BIG Data Software Engineering*, BIGDSE '16, pages 19–25, New York, NY, USA, 2016. ACM.
4. Yuxing Ma, Tapajit Dey, and Audris Mockus. Modularizing global variable in climate simulation software: Position paper. In *Proceedings of the International Workshop on Software Engineering for Science*, SE4Science '16, pages 8–11, New York, NY, USA, 2016. ACM.
5. Patrick Tendick and Audris Mockus. Decisions as a service for application centric real time analytics. In *Proceedings of the 2Nd International Workshop on BIG Data Software Engineering*, BIGDSE'16, pages 1–7, New York, NY, USA, 2016. ACM.
6. Peter Rigby, Yue Cai Zhu, Samuel M. Donadelli, and Audris Mockus. Quantifying and mitigating turnover-induced knowledge loss: Case studies of chrome and a project at avaya. In *ICSE'16*, pages 1006–1016, Austin, Texas, May 2016. ACM.
7. Meiyappan Nagappan, Romain Robbes, Yasutaka Kamei, Éric Tanter, Shane McIntosh, Audris Mockus, and Ahmed E. Hassan. An empirical study of goto in c code from github repositories. In *ESEC/FSE'15*, pages 404–414, 2015.
8. Kapil Agrawal, Sadika Amreen, and Audris Mockus. Commit quality in five high performance computing projects. In *The 2015 International Workshop on Software Engineering for High Performance Computing in Science*, pages 24–29, May 2015.
9. Qimu Zheng, Audris Mockus, and Minghui Zhou. A method to identify and correct problematic software activity data: Exploiting capacity constraints and data redundancies. In *ESEC/FSE'15*, pages 637–648, Bergamo, Italy, 2015. ACM.
10. Minghui Zhou and Audris Mockus. Mining micro-practices from operational data. In *The 22nd ACM SIGSOFT International Symposium on the Foundations of Software Engineering*, pages 845–848, Hong Kong, November 16-21 2014.
11. Anh Nguyen Duc, Audris Mockus, Randy Hackbarth, and John Palframan. Forking and coordination in multi-platform development: a case study. In *ESEM*, pages 59:1–59:10, Torino, Italy, September 2014.
12. Jiaxin Zhu, Minghui Zhou, and Audris Mockus. The relationship between folder use and the number of forks: A case study on github repositories. In *ESEM*, pages 30:1–30:4, Torino, Italy, September 2014.
13. Feng Zhang, Audris Mockus, Iman Keivanloo, and Ying Zou. Towards building a universal defect prediction model. In *11th IEEE Working Conference on Mining Software Repositories*, pages 182–191, May 30–31 2014.
14. Jialiang Xie, Qimu Zhengand, Minghui Zhou, and Audris Mockus. Product assignment recommender. In *ICSE'14 Demonstrations*, pages 556–559, 2014.
15. Audris Mockus. Engineering big data solutions. In *ICSE'14 FOSE*, pages 85–99, 2014.
16. Shane McIntosh, Martin Poehlmann, Elmar Juergens, Audris Mockus, Bram Adams, Ahmed E. Hassan, Brigitte Haupt, and Christian Wagner. Collecting and leveraging a benchmark of build system clones to aid in quality assessments. In *ICSE'14 Software Engineering In Practice*, pages 145–154, 2014.
17. Jialiang Xie, Minghui Zhou, and Audris Mockus. Impact of triage: a study of Mozilla and Gnome. In *ESEM'13*, pages 247–250, 2013.

18. Audris Mockus, Randy Hackbarth, and John Palframan. Risky files: An approach to focus quality improvement effort. In *9th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering*, pages 691–694, 2013.
19. David Weiss and Audris Mockus. The chunking pattern. In *International Workshop on Data Analysis Patterns in Software Engineering*, 2013.
20. Feng Zhang, Audris Mockus, Ying Zou, Foutse Khomh, and Ahmed E. Hassan. How does context affect the distribution of software maintainability metrics? In *Proceedings of the 29th IEEE International Conference on Software Maintenance, ICSM '13*, pages 350–359, 2013.
21. Dag I.K. Sjøberg, Bente Anda, and Audris Mockus. Questioning software maintenance metrics: a comparative case study. In *Proceedings of the ACM-IEEE international symposium on Empirical software engineering and measurement, ESEM '12*, pages 107–110, New York, NY, USA, 2012. ACM.
22. Minghui Zhou and Audris Mockus. What make long term contributors: Willingness and opportunity in OSS community. In *ICSE 2012*, pages 518–528, Zürich, Switzerland, 2012.
23. Jialiang Xie, Audris Mockus, and Minghui Zhou. Visualizing evolution of software issue-tracking practices. In *ESEM 2011*, Banff, Canada, Sep 22–23 2011.
24. Emad Shihab, Audris Mockus, Yasutaka Kamei, Bram Adams, and Ahmed E. Hassan. High-impact defects: a study of breakage and surprise defects. In *Proceedings of the 19th ACM SIGSOFT symposium and the 13th European conference on Foundations of software engineering, ESEC/FSE '11*, pages 300–310, New York, NY, USA, 2011. ACM.
25. Minghui Zhou and Audris Mockus. Does the initial environment impact the future of developers? In *ICSE 2011*, pages 271–280, Honolulu, Hawaii, May 21–28 2011.
26. Minghui Zhou and Audris Mockus. Growth of newcomer competence: Challenges of globalization. In *FSE/SDP Workshop on the Future of Software Engineering Research*, pages 442–447, Santa Fe, New Mexico, November 7–8 2010.
27. Audris Mockus. Organizational volatility and its effects on software defects. In *ACM SIGSOFT / FSE*, pages 117–126, Santa Fe, New Mexico, November 7–11 2010.
28. Minghui Zhou and Audris Mockus. Developer fluency: Achieving true mastery in software projects. In *ACM SIGSOFT / FSE*, pages 137–146, Santa Fe, New Mexico, November 7–11 2010.
29. Audris Mockus, Nachiappan Nagappan, and T Dinh-Trung, Trung. Test coverage and post-verification defects: A multiple case study. In *International Conference on Empirical Software Engineering and Measurement*, Lake Buena Vista, Florida USA, October 2009. ACM.
30. Audris Mockus. Amassing and indexing a large sample of version control systems: towards the census of public source code history. In *6th IEEE Working Conference on Mining Software Repositories*, May 16–17 2009.
31. Audris Mockus. Succession: Measuring transfer of code and developer productivity. In *2009 International Conference on Software Engineering*, Vancouver, CA, May 12–22 2009. ACM Press.
32. Minghui Zhou, Audris Mockus, and David Weiss. Learning in offshored and legacy software projects: How product structure shapes organization. In *ICSE Workshop on Socio-Technical Congruence*, Vancouver, Canada, May 19 2009.
33. Audris Mockus. Organizational volatility and developer productivity. In *ICSE Workshop on Socio-Technical Congruence*, Vancouver, Canada, May 19 2009.
34. Audris Mockus and David Weiss. Interval quality: Relating customer-perceived quality to process quality. In *2008 International Conference on Software Engineering*, pages 733–740, Leipzig, Germany, May 10–18 2008. ACM Press.
35. Hung-Fu Chang and Audris Mockus. Evaluation of source code copy detection methods on FreeBSD. In *5th Working Conference on Mining Software Repositories*. ACM Press, May 10–11 2008.

36. Audris Mockus. Large-scale code reuse in open source software. In *ICSE'07 Intl. Workshop on Emerging Trends in FLOSS Research and Development*, Minneapolis, Minnesota, May 21 2007.
37. Sunghun Kim, Thomas Zimmermann, Miryung Kim, Ahmed E. Hassan, Audris Mockus, Tudor Gîrba, Martin Pinzger, E. James Whitehead Jr., and Andreas Zeller. Ta-re: an exchange language for mining software repositories. In *ICSE'06 Workshop on Mining Software Repositories*, pages 22–25, Shanghai, China, May 22-23 2006.
38. Hung-Fu Chang and Audris Mockus. Constructing universal version history. In *ICSE'06 Workshop on Mining Software Repositories*, pages 76–79, Shanghai, China, May 22-23 2006.
39. Audris Mockus. Empirical estimates of software availability of deployed systems. In *2006 International Symposium on Empirical Software Engineering*, pages 222–231, Rio de Janeiro, Brazil, September 21-22 2006. ACM Press.
40. Birgit Geppert, Audris Mockus, and Frank Röbler. Refactoring for changeability: A way to go? In *Metrics 2005: 11th International Symposium on Software Metrics*, Como, September 2005. IEEE CS Press.
41. Audris Mockus, Ping Zhang, and Paul Li. Drivers for customer perceived software quality. In *ICSE 2005*, pages 225–233, St Louis, Missouri, May 2005. ACM Press.
42. Audris Mockus. Analogy based prediction of work item flow in software projects: a case study. In *2003 International Symposium on Empirical Software Engineering*, pages 110–119, Rome, Italy, October 2003. ACM Press.
43. James Herbsleb and Audris Mockus. Formulation and preliminary test of an empirical theory of coordination in software engineering. In *2003 International Conference on Foundations of Software Engineering*, Helsinki, Finland, October 2003. ACM Press.
44. Audris Mockus, David M. Weiss, and Ping Zhang. Understanding and predicting effort in software projects. In *2003 International Conference on Software Engineering*, pages 274–284, Portland, Oregon, May 3-10 2003. ACM Press.
45. Audris Mockus and James Herbsleb. Expertise browser: A quantitative approach to identifying expertise. In *2002 International Conference on Software Engineering*, pages 503–512, Orlando, Florida, May 19-25 2002. ACM Press.
46. Stacie Hibino and Audris Mockus. handiMessenger: Awareness-enhanced universal communication for mobile users. In Fabio Paternò, editor, *Mobile Human-Computer Interaction, 4th International Symposium, Mobile HCI 2002, Pisa, Italy, September 18-20, 2002, Proceedings*, volume 2411 of *Lecture Notes in Computer Science*, pages 170–183, Pisa, Italy, September, 18-20 2002. Springer.
47. J. A. Espinosa, R.E. Kraut, S. A. Slaughter, J. F. Lerch, J. D. Herbsleb, and A. Mockus. Shared mental models, familiarity, and coordination: A multi-method study of distributed software teams. In *Proc. International Conference in Information Systems*, pages 513–518, Barcelona, Spain, December 15–18 2001.
48. James D. Herbsleb, Audris Mockus, Thomas A. Finholt, and Rebecca E. Grinter. An empirical study of global software development: Distance and speed. In *23rd International Conference on Software Engineering*, pages 81–90, Toronto, Canada, May 12-19 2001.
49. A Mockus and JD Herbsleb. Challenges of global software development. In *Metrics 2001: Seventh International Symposium on Software Metrics*, pages 182–184, London, England, April 4-6 2001.
50. HP Siy, A Mockus, JD Herbsleb, M Krishnan, and GT Tucker. Making the software factory work: Lessons from a decade of experience. In *Metrics 2001: Seventh International Symposium on Software Metrics*, pages 317–327, London, England, April 4-6 2001.
51. James D. Herbsleb, Audris Mockus, Thomas A. Finholt, and Rebecca E. Grinter. Distance, dependencies, and delay in a global collaboration. In *ACM 2000 Conference on Computer Supported Cooperative Work*, pages 319–328, Philadelphia, Pennsylvania, USA, December 2–6 2000. ACM, ACM Press.
52. Audris Mockus and Lawrence G. Votta. Identifying reasons for software change using historic databases. In *International Conference on Software Maintenance*, pages 120–130, San Jose, California, October 11-14 2000.

53. A. Mockus, R. F. Fielding, and J. Herbsleb. A case study of open source development: The Apache server. In *22nd International Conference on Software Engineering*, pages 263–272, Limerick, Ireland, June 4-11 2000.
54. S.L. Hibino, T. Graves, and A. Mockus. A web based approach to interactive visualization in context. In *Advanced Visual Interfaces*, pages 181–188, Palermo, Italy, May 23-26 2000.
55. Harvey Siy and Audris Mockus. Measuring domain engineering effects on software coding cost. In *Metrics 99: Sixth International Symposium on Software Metrics*, pages 304–311, Boca Raton, Florida, November 4–6 1999.
56. Audris Mockus. Analysis of software evolution data. In *Joint Statistical Meetings, 1999. Abstracts*, page 121, Baltimore, Maryland, August 8-14 1999.
57. D. Atkins, T. Ball, T. Graves, and A. Mockus. Using version control data to evaluate the effectiveness of software tools. In *1999 International Conference on Software Engineering*, pages 324–333. ACM Press, May 16–22 1999.
58. K.C. Cox, S.L. Hibino, L. Hong, A. Mockus, and G.J. Wills. Infostill: A task-oriented framework for analyzing data through information visualization. In *Proc. IEEE Information Visualization Late Breaking Hot Topics*, pages 19–22, San Francisco, CA, October 1999.
59. Nancy Staudenmayer, Todd Graves, J. Steve Marron, Audris Mockus, Dewayne Perry, Harvey Siy, and Lawrence Votta. Adapting to a new environment: How a legacy software organization copes with volatility and change. In *5th International Product Development Management Conference*, Como, Italy, May 1998.
60. Audris Mockus. Navigating aggregation spaces. In *IEEE Information Visualization Symposium 1998 Late Breaking Hot Topics Proceedings*, pages 29–32, Research Triangle Park, NC, 1998. IEEE Computer Society Press.
61. Todd L. Graves and Audris Mockus. Inferring programmer effort from software databases. In *22nd European Meeting of Statisticians and 7th Vilnius Conference on Probability Theory and Mathematical Statistics*, page 334, Vilnius, Lithuania, August 1998.
62. Todd L. Graves and Audris Mockus. Inferring change effort from configuration management data. In *Metrics 98: Fifth International Symposium on Software Metrics*, pages 267–273, Bethesda, Maryland, November 1998.
63. Stephen G. Eick, Audris Mockus, Todd L. Graves, and Alan F. Karr. Web-based text visualization. In Wolfgang Bandilla and Frank Faulbaum, editors, *SoftStat '97 Advances in Statistical Software 6*, pages 3–10. Lucius & Lucius, March 1997.
64. W.F. Eddy, M. Fitzgerald, C.R. Genovese, A. Mockus, and D.C. Noll. Functional imaging analysis software - computational olio. In A. Prat, editor, *Proceedings in Computational Statistics*, pages 39–49. Physica-Verlag, Heidelberg, 1996.
65. A. Mockus, W.F. Eddy, S.Y. Chang, and K.R. Thulborn. Software for the visualization of fMRI data. In *Proceedings of the International Society for Magnetic Resonance in Medicine Fourth Scientific Meeting and Exhibition*, page 1774, 1996.
66. W.F. Eddy, M. Fitzgerald, C. Genovese, and A. Mockus. The challenge of functional magnetic resonance imaging. In *Massive Data Sets*, pages 39–45, Washington, D.C., 1996. National Academy Press.
67. W. F. Eddy and A. Mockus. Discovering, describing, and understanding spatial-temporal patterns of disease using dynamic graphics. In *Proceedings of the 25th Public Health Conference on Records and Statistics, U.S. Department of Health and Human Services*, pages 14–17, 1995.
68. A. Mockus, J. Mockus, and L. Mockus. Discrete optimization, information based complexity, and Bayesian heuristics approach. In *Proceedings of International Symposium on Operations Research with Applications in Engineering Technology and Management (ISORA '95), August 19-22, Beijing, China, 1995*.
69. A. Mockus. Estimating dependencies from spatial averages. In *American Statistical Association: 1995 Proceedings of the Section on Statistical Graphics*, Orlando, Florida, August 1995.

70. W.F. Eddy and A. Mockus. Visualizing spatial and temporal trends for the incidence of six diseases. In *Symposium on Statistical Methods 1995. Small Area Statistics in Public Health*, Atlanta, Georgia, 1995.
71. M. Behrmann, P.A. Carpenter, S.Y. Chang, W.F. Eddy, J.S. Gillen, M.A. Just, T.A. Keller, A. Mockus, T.A. Tasciyan, and K.R. Thulborn. Test-retest reproducibility during fMRI studies: Primary visual and cognitive paradigms. In *Proceedings of the Society of Magnetic Resonance, Third Scientific Meeting*, volume 2, page 843, 1995.
72. W.F. Eddy and A. Mockus. An interactive image index. In *American Statistical Association: 1994 Proceedings of the Section on Statistical Graphics*, Toronto, Canada, 1994.
73. A. Mockus, J. Mockus, and L. Mockus. Bayesian approach in stochastic and heuristic methods of global and discrete optimization. In *Abstracts, Second World Meeting, International Society for Bayesian Analysis*, pages 10–11, Alicante, Spain, 1994.
74. W.F. Eddy and A. Mockus. Noninteractive display of functions with temporal and spatial variation (or surreal-time graphics). In *New Directions in Statistical Data Analysis and Robustness*, pages 47–60. Birkhäuser Verlag, Basel, 1993.
75. W.F. Eddy, M.M. Meyer, A. Mockus, M.J. Schervish, K. Tan, and K. Viele. Smoothing census adjustment factors - an application of high performance computing. In *Computing Science and Statistics: Proceedings of the 24th Symposium on the Interface*, pages 503–510, 1992.

Articles in Refereed Journals or Book Chapters

76. I. Gorton, A. B. Bener, and A. Mockus. Software engineering for big data systems. *IEEE Software*, 33(2):32–35, Mar 2016.
77. Minghui Zhou, Audris Mockus, Xiujuan Ma, , Lu Zhang, and Hong Mei. Inflow and retention in oss communities with commercial involvement: A case study of three hybrid projects. *ACM Transactions on Software Engineering and Methodology*, 25(2):13:1–13:29, April 2016.
78. Feng Zhang, Audris Mockus, Iman Keivanloo, and Ying Zou. Towards building a universal defect prediction model with rank transformed predictors. *Empirical Software Engineering*, pages 1–39, 2015.
79. R. Hackbarth, A. Mockus, J. Palframan, and D. Weiss. Assessing the state of software in a large enterprise: A twelve year retrospective. In *The Art and Science of Analyzing Software Data*, volume 1, chapter 15. Morgan Kaufmann, 2015.
80. R. Hackbarth, A. Mockus, J. Palframan, and R. Sethi. Customer quality improvement of software systems. *Software, IEEE*, 33(4):40–45, 2016.
81. Shane McIntosh, Meiyappan Nagappan, Bram Adams, Audris Mockus, and AhmedE. Hassan. A large-scale empirical study of the relationship between build technology and build maintenance. *Empirical Software Engineering*, 20(6):1587–1633, 2015.
82. Minghui Zhou and Audris Mockus. Who will stay in the floss community? modelling participant’s initial behaviour. *Transactions on Software Engineering*, 41(1):82–99, Jan 2015.
83. Yasutaka Kamei, Emad Shihab, Bram Adams, Ahmed E. Hassan, Audris Mockus, Anand Sinha, and Naoyasu Ubayashi. A large-scale empirical study of just-in-time quality assurance. *IEEE Transactions on Software Engineering*, 39(6):757–773, 2013.
84. Dag I.K. Sjoberg, Aiko Yamashita, Bente Anda, Audris Mockus, and Tore Dyba. Quantifying the effect of code smells on maintenance effort. *IEEE Transactions on Software Engineering*, 39(8):1144–1156, 2013.
85. Audris Mockus and David Weiss. Software chunks and distributed development. In Christof Ebert, editor, *Global Software and IT: a Guide to Distributed Development, Projects, and Outsourcing*, pages 69–82. Willey, 2011.
86. Randy Hackbarth, Audris Mockus, John Palframan, and David Weiss. Assessing the state of software in a large enterprise. *Journal of Empirical Software Engineering*, 10(3):219–249, 2010.

87. Marcelo Cataldo, Audris Mockus, Jeffrey A. Roberts, and James D. Herbsleb. Software dependencies, the structure of work dependencies and their impact on failures. *IEEE Transactions on Software Engineering*, 2009.
88. Bente C.D. Anda, Dag I.K. Sjøberg, and Audris Mockus. Variability and reproducibility in software engineering: A study of four companies that developed the same system. *IEEE Transactions on Software Engineering*, 35(3), May/June 2009.
89. Audris Mockus. Missing data in software engineering. In J. Singer et al., editor, *Guide to Advanced Empirical Software Engineering*, pages 185–200. Springer-Verlag, 2008.
90. Audris Mockus. Software support tools and experimental work. In V Basili and et al, editors, *Empirical Software Engineering Issues: Critical Assessments and Future Directions*, volume LNCS 4336, pages 91–99. Springer, 2007.
91. Audris Mockus, Roy T. Fielding, and James Herbsleb. Two case studies of open source software development: Apache and Mozilla. In J Feller and et al, editors, *Perspectives on Free and Open Source Software*, pages 163—210. MIT Press, 2005.
92. D. L. Atkins, A. Mockus, and H. P. Siy. *Value Based Software Engineering*, chapter Quantifying the Value of New Technologies for Software Development, pages 327–344. Springer Verlag Berlin Heidelberg, 2006.
93. J. D. Herbsleb and A. Mockus. An empirical study of speed and communication in globally-distributed software development. *IEEE Transactions on Software Engineering*, 29(6):481–494, June 2003.
94. D. Atkins, T. Ball, T. Graves, and A. Mockus. Using version control data to evaluate the impact of software tools: A case study of the version editor. *IEEE Transactions on Software Engineering*, 28(7):625–637, July 2002.
95. Audris Mockus, Roy T. Fielding, and James Herbsleb. Two case studies of open source software development: Apache and Mozilla. *ACM Transactions on Software Engineering and Methodology*, 11(3):1–38, July 2002.
96. S.G. Eick, T.L. Graves, A.F. Karr, A. Mockus, and P. Shuster. Visualizing software changes. *IEEE Transactions on Software Engineering*, 28(4):396–412, April 2002.
97. Audris Mockus and David M. Weiss. Globalization by chunking: a quantitative approach. *IEEE Software*, 18(2):30–37, March 2001.
98. T. Graves and A. Mockus. Identifying productivity drivers by modeling work units using partial data. *Technometrics*, 43(2):168–179, May 2001.
99. Stephen G. Eick, Todd L. Graves, Alan F. Karr, J. S. Marron, and Audris Mockus. Does code decay? assessing the evidence from change management data. *IEEE Transactions on Software Engineering*, 27(1):1–12, 2001.
100. Audris Mockus and David M. Weiss. Predicting risk of software changes. *Bell Labs Technical Journal*, 5(2):169–180, April–June 2000.
101. D. Atkins, A. Mockus, and H. Siy. Measuring technology effects on software change cost. *Bell Labs Technical Journal*, 5(2):7–18, April–June 2000.
102. W.F Eddy, M. Fitzgerald, C. Genovese, N. Lazar, A. Mockus, and Welling J. The challenge of functional magnetic resonance imaging. *Journal of Computational and Graphical Statistics*, 8(3):545–558, September 1999.
103. J. Mockus, A. Mockus, and L. Mockus. Bayesian approach for randomization of heuristic algorithms in discrete programming. In Panos Pardalos, Sanguthevar Rajasekaran, and Jose Rolim, editors, *DIMACS series in discrete mathematics and theoretical computer science*, volume 43, pages 161–177. American Mathematical Society, 1999.
104. Audris Mockus. Estimating dependencies from spatial averages. *Journal of Computational and Graphical Statistics*, 7(4):501–513, 12 1998.

105. Stephen G. Eick, Audris Mockus, Todd L. Graves, and Alan F. Karr. A web laboratory for software data analysis. *World Wide Web*, 1(2):55–60, 1998.
106. Audris Mockus, Adam Porter, Harvey Siy, and Lawrence G. Votta. Understanding the sources of variation in software inspections. *ACM Transactions on Software Engineering and Methodology*, 7(1), January 1998.
107. A. Mockus, J. Mockus, and L. Mockus. Bayesian heuristic approach (BHA) and applications to discrete optimization. *Fields Institute Communications*, 18:153–165, 1998.
108. W.F. Eddy and A. Mockus. An interactive icon index: Images of the outer planets. *Journal of Computational and Graphical Statistics*, 5(1):100–111, 1996.
109. J. Mockus, W.F. Eddy, A. Mockus, L. Mockus, and G. Reklaitis. *Bayesian Heuristic Approach to Discrete and Global Optimization*. Kluwer Academic Publishers, Dordrecht, 1997.
110. W. F. Eddy and A. Mockus. Dynamic visualization in modelling and optimization of ill defined problems. In C.A. Floudas and P.M. Pardalos, editors, *State of the Art in Global Optimization: computational methods and applications*, pages 499–520. Kluwer Academic Publishers, Dordrecht, 1996.
111. W.F. Eddy, A. Mockus, and S. Oue. Approximate single linkage cluster analysis of large data sets in spaces of high dimension. *Computational Statistics and Data Analysis*, 23:29–43, 1996.
112. M. Lavine and A. Mockus. A nonparametric Bayes method for isotonic regression. *Journal of Statistical Planning and Inference*, 46:235–248, 1995.
113. W.F. Eddy and A. Mockus. An example of the estimation and display of a smoothly varying function of time and space - the incidence of mumps disease. *Journal of the American Society for Information Science*, 45(9):686–693, 1994.
114. A. Mockus, J. Mockus, and L. Mockus. Adapting stochastic and heuristic methods for discrete optimization problems. *Informatica*, 5(1):123–166, 1994.
115. W.F. Eddy and A. Mockus. An example of noninteractive dynamic graphics for the visualization of manufacturing process data. *International Statistical Review*, 61(1):81–95, 1993.
116. A. Mockus and L. Mockus. Designing software for global optimization. *Informatica*, 1(1):71–88, 1990.

Tutorials and Talks

117. Audris Mockus. Evidence engineering, February 2015. Keynote at 8th India Software Engineering Conference.
118. Audris Mockus. Defect prediction and software risk, June 30 2014. Promise'14 Keynote/Tutorial.
119. Audris Mockus. Is mining software repositories data science?, June 30 2014. Talk at Vilnius University.
120. Audris Mockus. Operational data are not experimental data, June 22-27 2014. Dagstuhl Seminar 14261: Software Development Analytics.
121. Audris Mockus. Is mining software repositories data science?, May 2014. Keynote at 11th IEEE Working Conference on Mining Software Repositories 2014.
122. A. Mockus, M. Nagappan, and A. Hassan. Tutorial on statistics in software engineering: Pitfalls and good practices, August 2013. 25-30 attendees.
123. Audris Mockus. The paradox of software quality, November 2013. Distinguished Seminar, Queen's University, Kingston, Canada.
124. Audris Mockus. Law of minor release: More bugs \implies better software quality. In *International Workshop on Principles of Software Evolution*, St Petersburg, Russia, Aug 18-19 2013. Keynote.
125. Audris Mockus. Quantifying and conveying risk in software development. In *1st Symposium on Mining Software Archives*, Monte Verita, Switzerland, March 10-15 2013. Keynote.

126. James Herbsleb, Marcelo Cataldo, Daniela Damian, Premkumar Devenbu, Steve Easterbrook, and Audris Mockus. Socio-technical congruence (stc 2008). In *Companion of the 30th international conference on Software engineering*, 2008.
127. Ahmed E. Hassan, Richard C. Holt, and Audris Mockus. Report on MSR 2004: International workshop on mining software repositories. In *ACM SIGSOFT Software Engineering Notes*, 2005.
128. Audris Mockus. Measuring distributed software engineering. In *International Conference on Global Software Engineering*, Princeton, New Jersey, August 25, 2010 2010. Keynote.
129. Audris Mockus. Globalization and transfer of ownership. In *International Conference on Global Software Engineering*, Princeton, New Jersey, August 25, 2010 2010. Panel: Impact of Future Communication Technologies on GSD.
130. Audris Mockus. Measurement in science and software engineering. In *1st Symposium on Mining Software Archives*, Monte Verita, Switzerland, March 17 2010. Keynote.
131. Audris Mockus. Globalization and the future developer. In *New Frontiers for Empirical Software Engineering*, Dagstuhl, Germany, March, 2010 2010. Panel: Future of Globally Distributed Software Development.
132. Audris Mockus. Using software changes to understand software projects, February 2010. Distinguished Seminar, Queen's University, Kingston, Canada.
133. Audris Mockus. Towards understanding of software changes, 2009. Peking University, Beijing.
134. Audris Mockus. Using software changes to understand software projects, 2009. Institute of Software, Chinese Academy of Sciences, Beijing.
135. Audris Mockus. Domain-specific defect models. In *International Workshop on Defects in Large Software System*, Seattle, WA, July 20 2008. Keynote.
136. Audris Mockus. Large scale reuse in open source software, 2008. Institute of Mathematics and Informatics, Vilnius.
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138. Audris Mockus. Faces of software quality, 2008. Microsoft Research, Redmond.
139. Audris Mockus and David Weiss. Industrial strength software measurement, 2006. Peking University, Beijing.
140. Audris Mockus. Software changes and software engineering. In *Multi-Version Program Analysis*. Schloss Dagstuhl, Germany, 26 June 2005. Keynote.
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142. Audris Mockus. Effects of distributed software development and virtual teams, 2004. University of Victoria, Victoria.
143. Audris Mockus. Effects of distributed software development and virtual teams, 2004. Simula Labs, Oslo.
144. Audris Mockus. Software changes: from insights to solutions, 2002. Carnegie Mellon University, Pittsburgh.
145. Audris Mockus. Analysis of software changes, 2002. University of Maryland, College Park.
146. Audris Mockus. Expertise browser. In *Joint Statistical Meetings, 2001*, Atlanta, Georgia, August 5-9 2001.
147. Audris Mockus. Role of change history in empirical studies of software, 1998. University of Karlsruhe.
148. Audris Mockus. Modeling software evolution, 1998. Texas A&M University, College Station, TX.
149. Audris Mockus. If software could talk: why changes are made, 1998. Fraunhofer IESE, Kaiserslautern.

150. Audris Mockus. Inferring programmer effort from software change data, 1998. Institute of Mathematics and Informatics, Vilnius.

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151. James Herbsleb, Marcelo Cataldo, Daniela Damian, Premkumar Devanbu, Steve Easterbrook, and Audris Mockus. Socio-technical congruence (STC 2008). In *ICSE Companion '08: Companion of the 30th international conference on Software engineering*, pages 1027–1028, New York, NY, USA, 2008. ACM.
152. Audris Mockus. How to run empirical studies using project repositories. 4th International Advanced School of Empirical Software Engineering, September 20, 2006, Rio de Janeiro, Brazil 2006. Tutorial.
153. Daniel German and Audris Mockus. Automating the measurement of open source projects. In *ICSE '03 Workshop on Open Source Software Engineering*, page Automating the Measurement of Open Source Projects, Portland, Oregon, May 3-10 2003.
154. Audris Mockus. Measurement in software projects: taking advantage of version control repositories. In *International Software Engineering Network, 2002*, Nara, Japan, October 2002.
155. Audris Mockus and James Herbsleb. Why not improve coordination in distributed software development by stealing good ideas from open source. In *ICSE '02 Workshop on Open Source Software Engineering*, pages 35–37, Orlando, FL, May 2002.
156. Audris Mockus T. Ball, Stephen G. Eick. Web-based analysis of large-scale software systems. In *ICSE '97 Workshop on Software Engineering (on) the World Wide Web*, Boston, MA, May 1997.
157. Nancy Staudenmayer, Todd Graves, and Audris Mockus. Adapting to a new environment: How a legacy software organization copes with volatility and change. In *Academy of Management Chicago 1999 Conference*, Chicago, Illinois, August 1999.
158. Audris Mockus, Todd L. Graves, and Alan F. Karr. Modelling software changes. In C.E. Minder and H. Friedl, editors, *Good Statistical Practice*, pages 175–179. Austrian Statistical Society, Wien, Austria, July 1997. Proceedings of the 12th International Workshop on Statistical Modeling, Biel/Bienne.
159. William F. Eddy and Audris Mockus Incidence of Disease Mumps ASA Video Library (1994) 15:00 minutes <http://www.bell-labs.com/topic/societies/asagraphics/library/>
160. William F. Eddy and Audris Mockus Manufacturing Process Data ASA Video Library (1993) 9:00 minutes <http://www.bell-labs.com/topic/societies/asagraphics/library/>

Technical Reports

161. Audris Mockus. Succession: Measuring transfer of code and developer productivity. Technical report, Avaya Labs research, 2008.
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164. A Mockus and DM Weiss. Globalization by chunking: A quantitative approach. Technical Report 10009677-000727-03TM, Lucent Technologies, 2000.
165. JD Herbsleb, M Krishnan, A Mockus, HP Siy, and GT Tucker. Making the software factory work: Lessons from a decade of experience. Technical Report 10009677-000404-02TM, Lucent Technologies, 2000.
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Other

1. PI: Audris Mockus, Co-PIs: Bogdan Bichescu, Randy Bradley, James Herbsleb, Russell Zaretsky Sponsor: National Science Foundation BIGDATA: Collaborative Research: IA: OSCAR - Open Source Supply Chains and Avoidance of Risk: An evidence based approach to improve FLOSS supply chains, IIS-1633437 Amount: 665,097.00, total: 1,300,000
2. PI: Audris Mockus, Co-PI: Dawnie Steadman ICPUTRD: Image Cloud Platform for Use in Tagging and Research on Decomposition Sponsor: National Institute Of Justice, USDOJ-NIJ-2016-DN-BX-0179 Amount: 327,372.00
3. PI: Audris Mockus A hybrid data structure for future ALM development Sponsor: UT-Battelle, LLC, UT-B 4000151205 Amount: 29,499.00
4. Audris Mockus, Randy Hackbarth, John Palframan, and Brett Shockley. System and method for prioritizing customers and predicting service escalation, US Patent 9176729 , granted on October 27, 2015.
5. Audris Mockus, Randy Hackbarth, and John Palframan. System and method for prioritizing and remediating defect risk in source code, US Patent 9172809, granted on October 27, 2015.
6. System and method for interactive visualization, analysis and control of a dynamic database. US Patent 5937064, granted on August 10, 1999
7. Method and apparatus for data visualization US Patent 8386920 2013
8. Audris Mockus Co-Principal Investigator Coordination, communication, and collaboration in open source software development NSF Grant 0414698 03/01/06 – 05/31/09

Professional

Program Co-Chair, ESEC-FSE'15 Industry, Bergamo, Italy 2015.

General Chair, MSR'10, Cape Town, South Africa 2010.

Program Co-Chair, Second International Conference on Global Software Engineering, Munich, 2007.

Program Co-Chair, Tenth International Symposium on Software Metrics, Chicago, 2004.

- Co-Organizer, ICSE Workshop on Socio-Technical Congruence, 2008,2009
- Co-Organizer, 1st International Workshop on Mining Software Repositories, Edinburgh, Scotland, 2004.
- Editorial board, IEEE Transactions on Software Engineering 2005-2009 and 2013-
- Editorial board, International Journal of Empirical Software Engineering 2002-.
- Co-Editor, IEEE Software special issue on Software Engineering for Big Data Systems, 2016.
- Co-Editor, IEEE Transactions on Software Engineering special issue on Socio Technical Congruence, 2009-2010.
- Co-Editor, IEEE Transactions on Software Engineering special issue on Mining Software Repositories, 2004-2005.
- Advisory committee, 1st International Workshop on Replication in Empirical Software Engineering Research, Cape Town, South Africa.
- Member, Program Committee, 14th IEEE Working Conference on Mining Software Repositories, Buenos Aires, Argentina, 2017.
- Member, Program Committee, Foundations of Software Engineering - Industry Track, Paderborn, Germany, 2017
- Member, Program Committee, 12th International Conference on Global Software Engineering, Buenos Aires, Argentina, 2017.
- Member, Program Committee, Foundations of Software Engineering, Seattle, 2016
- Member, Program Committee, Foundations of Software Engineering - Industry Track, Seattle, 2016
- Member, Program Committee, Visions of 2025 and Beyond, ICSE'16, Austin, 2016
- Member, Program Committee, 13th IEEE Working Conference on Mining Software Repositories, Austin, 2016.
- Member, Program Committee, 10th ACM / IEEE International Symposium on Empirical Software Engineering and Measurement, Ciudad Real, 2016
- Member, Program Committee, 2nd International Workshop on BIG Data Software Engineering, Austin, 2016
- Member, Program Committee, 11th International Conference on Global Software Engineering, Orange County, California, 2016.
- Member, Program Committee, Foundations of Software Engineering, Bergamo, 2015
- Member, Program Committee, 22nd IEEE International Conference on Software Analysis, Evolution, and Reengineering, Osaka, 2015
- Member, Program Committee, 31st International Conference on Software Maintenance and Evolution, Bremen, 2015
- Member, Program Committee, 9th ACM / IEEE International Symposium on Empirical Software Engineering and Measurement, Beijing, 2015.
- Member, Program Committee, 8th India Software Engineering Conference, Bangalore, 2015
- Member, Program Committee, 11th International Conference on Open Source Systems, 2015.
- Member, Program Committee, 1st International Workshop on BIG Data Software Engineering, Florence, 2015
- Member, Program Committee, 12th IEEE Working Conference on Mining Software Repositories, Florence, 2015.

- Member, Program Committee, International Conference on Software Engineering, Hyderabad, India 2014.
- Member, Program Committee, 11th IEEE Working Conference on Mining Software Repositories, Hyderabad, 2014.
- Member, Program Committee, 8th ACM / IEEE International Symposium on Empirical Software Engineering and Measurement, Torino, 2014.
- Member, Program Committee, Visions and Challenges Track, 22nd ACM SIGSOFT International Symposium on the Foundations of Software Engineering, Hong Kong, 2014
- Member, Program Committee, 9th International Conference on Global Software Engineering, Shanghai, China, 2014.
- Mentor, Mentoring Program for International Conference on Software Engineering, 2013.
- Member, Program Committee, 10th IEEE Working Conference on Mining Software Repositories, San Francisco, 2013.
- Member, Program Committee, 7th ACM / IEEE International Symposium on Empirical Software Engineering and Measurement, Baltimore, 2013.
- Member, Program Committee, 8th International Conference on Global Software Engineering, Bari, Italy, 2013.
- Member, Program Committee, 9th IEEE Working Conference on Mining Software Repositories, Zürich, 2012.
- Member, Program Committee, 6th ACM / IEEE International Symposium on Empirical Software Engineering and Measurement, Lund, Sweden, 2012.
- Member, Program Committee, 7th International Conference on Global Software Engineering, Porto Alegre, Brazil, 2012.
- Mentor, Mentoring Program for International Conference on Software Engineering, Zürich, 2012.
- Member, Program Committee, 7th International Conference on Global Software Engineering, Porto Alegre, Brazil, 2012.
- Member, Program Committee, 8th IEEE Working Conference on Mining Software Repositories, Hawaii, 2011.
- Member, Program Committee, 5th ACM / IEEE International Symposium on Empirical Software Engineering and Measurement, Banff, Canada, 2011.
- Member, Program Committee, 6th International Conference on Global Software Engineering, Helsinki, Finland, 2011.
- Member, Program Committee, 4-th International Symposium on Empirical Software Engineering and Measurement, Bolzano-Bozen, Italy, 2010.
- Member, Program Committee, International Conference on Software Engineering, Cape Town, South Africa 2010.
- Member, Program Committee, 6th IEEE Working Conference on Mining Software Repositories, Vancouver, Canada, 2009.
- Member, Program Committee, 4th International Conference on Global Software Engineering, Limerick, Ireland 2009.
- Member, Program Committee, International Workshop on Defects in Large Software Systems, Chicago, USA, 2009.
- Expert Review Committee, Canada Foundation for Innovation, 2009.

NSF review panel, 2008.

Member, Program Committee, 5th Working Conference on Mining Software Repositories, Leipzig, Germany, 2008.

Member, Program Committee, Third International Conference on Global Software Engineering, Bangalore, India 2008.

Member, Program Committee, International Conference on Empirical Software Engineering and Measurement, Kaiserslautern, Germany, 2008.

Member, Program Committee, International Workshop on Defects in Large Software Systems, Seattle, USA, 2008.

Member, Program Committee, 4th International Workshop on Mining Software Repositories, Minneapolis, USA, 2007.

Member, Program Committee, International Conference on Empirical Software Engineering and Measurement, Madrid, Spain, 2007.

Member, Program Committee, 3rd International Workshop on Mining Software Repositories, Shanghai, China, 2006.

Member, Program Committee, International Conference on Software Engineering, 2006.

Member, Program Committee, 2nd International Workshop on Mining Software Repositories, St. Lois, Missouri, USA, 2005.

Member, Program Committee, 11th International Symposium on Software Metrics, Como, Italy, 2005.

Member, Program Committee, 6th International Conference on Product Focused Software Process Improvement, Oulu, Finland, 2005.

Member, Program Committee, Third International Workshop on Global Software Development, Edinburgh, Scotland, 2004.

Member, Program Committee, Third International Symposium on Empirical Software Engineering, Rondo Beach, CA, 2004.

Member, Program Committee, Ninth International Symposium on Software Metrics, Sydney, 2004.

Member, Program Committee, Second International Symposium on Empirical Software Engineering, Rome, 2003.

Member, Program Committee, Ninth International Symposium on Software Metrics, Sydney, 2003.

Member, Program Committee, First International Symposium on Symposium on Empirical Software Engineering, Nara, 2002.

Member, Program Committee, Eighth International Symposium on Software Metrics, Ottawa, 2002.

Member, Program Committee, Seventh International Symposium on Software Metrics, London, 2001.

Member, Program Committee, International Conference on Software Maintenance, San Jose, California, 2000.

Member, Program Committee, Sixth International Symposium on Software Metrics, Boca Raton, Florida, 1999.

Member, International Software Engineering Research Network, representative for Avaya.

Member, IEEE, IEEE Computer Society.

Member, American Association for the Advancement of Science.

Risky code prediction: a tool that integrates data from multiple customer support and development systems to model the future chances of a customer-reported defect, identifies one percent of the most risky project code, and suggests the most effective risk remediation methods.

Predicting vulnerable customer systems: a tool that uses customer configuration, service reports, and product issues to model the chances of serious customer dissatisfaction. It presents the list of “hottest” customers with the information necessary to take the necessary action.

Customer quality measure: integrates sales, support, and development data to provide customer perception of software quality: the chances that an average customer will report a valid product issue.

Universal Version History: an index of all versions of the source code for open source projects (presently with over 220M unique file-versions) .

Expertise Browser: a web-based system to assist developers, testers, and managers in identifying experts for a number of software development tasks.

SoftChunk: a system to identify candidate chunks for distributed development across several locations.

Change Risk Predictor: is a tool to model and forecast the likelihood that a software change will cause a failure upon delivery.

SoftChange: a collection of tools to measure and model software changes.

LiveDocs: a framework for easily integrating and controlling information visualization (infoVis) components within web pages to create powerful interactive “live” documents.

FIASCO (Functional Image Analysis Software - Computational Olio): a collection of tools for processing functional Magnetic Resonance Imaging data.

I^3 (Interactive Image Index, pronounced *Ice Cube*): a system to analyze a collection of tens of thousands of images.

MIASMA (Multivariate Interactive Animation System For Map Analysis): a system to model and analyze spread of 57 reportable infectious diseases in the United States.