Craig E. Wills

Professor
Computer Science Department
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Education

Ph.D. Computer Science. Purdue University. May, 1988. Dissertation title "Service Execution in a Distributed Environment." Committee: J.T. Korb (advisor), D. Comer, P. Mehrotra and R. Stansifer

M.S. Computer Science. Purdue University. May, 1984

B.S. Computer Science. University of Nebraska. May, 1982

Professional Experience

Computer Science Department, Worcester Polytechnic Institute. Professor. July, 2022 – present

Department of Computer Science and Engineering, University of Bologna, Italy. Visiting Professor. Host: Michele Colajanni. March, 2023 – May, 2023

Computer Science Department, Worcester Polytechnic Institute. Professor and Department Head. January, 2011 – June, 2022

Computer Science Department, Worcester Polytechnic Institute. Professor. July, 2010 – December, 2010

Computer Science Department, Worcester Polytechnic Institute. Associate Professor. July, 1996 – June, 2010

Cisco Systems, Inc. Boxborough, Massachusetts. Visiting Faculty, Network Management Technology Group. August, 2004 – July, 2005

School of Mathematical and Computing Sciences, Victoria University of Wellington, New Zealand. Visiting Professor. July, 1997 – June, 1998

Computer Science Department, Worcester Polytechnic Institute. Assistant Professor. August, 1990 – June, 1996

AT&T Bell Laboratories, Middletown, New Jersey. Design and development of an automation tool for network management applications. May, 1988 – August, 1990

Department of Computer Science, Purdue University. Instructor, programmer, research assistant and grader. August, 1982 – May, 1988

Research Interests

Internet application performance and measurement; security/privacy; distributed systems; networking; operating systems; human-computer interaction; Computer Science education and workforce; data-driven analysis of higher education, geography and sports.

Publications

Citations 6210 total citations with h-index of 34 based upon information available from Google Scholar Profile. March 2024

Books and Book Chapters

1. Craig E. Wills. Process synchronization and IPC. In Teo Gonzalez and Jorge L. Diaz-Herrera, editors, *Computer Science and Software Engineering Computing Handbook*. CRC Press, 2013

2. Craig E. Wills. Process synchronization and IPC. In Allen Tucker, editor, *Computer Science Handbook, Second Edition*, chapter 84, pages 84–1–84–22. CRC Press, 2004

3. Craig E. Wills, Kirstin Cadwell, and William Marrs. Customization in a UNIX computing environment. In Eric Anderson, Mark Burgess, and Alva Couch, editors, *Selected Papers in Network and System Administration*, pages 203–209. John Wiley & Sons Ltd, 2002. Compilation of significant contributions to the field of system administration

4. Craig E. Wills. Process synchronization and IPC. In Allen Tucker, editor, *Handbook of Computer Science and Engineering*, chapter 79, pages 1725–1746. CRC Press, 1996

5. Craig E. Wills. A model for executing computations in a distributed environment. In T.L. Casavant and M. Singhal, editors, *Readings in Distributed Computing Systems*, pages 116–132. IEEE Computer Society Press, 1994

Refereed Journals

1. Craig E. Wills. The competitiveness of games in professional sports leagues. *Journal of Sports Analytics*, 3(2):103–117, July 2017.

2. Craig E. Wills and Mihajlo Zeljkovic. A personalized approach to web privacy—awareness, attitudes and actions. *Information Management and Computer Security*, 19(1):53–73, 2011.

3. Balachander Krishnamurthy and Craig E. Wills. On the leakage of personally identifiable information via online social networks. *ACM SIGCOMM Computer Communications Review*, 40(1):112–117, January 2010. Accepted for publication based on selection as one of the two best papers at the Workshop on Online Social Networks held in conjunction with ACM SIGCOMM 2009 Conference. This is a minor revision of the original workshop publication.

4. Hao Shang and Craig E. Wills. Making better use of all those TCP ACK packets. *ISAST Transactions on Communications and Networking*, 1(1):32–41, 2007.

5. Hao Shang and Craig E. Wills. Piggybacking related names to improve DNS performance. *Computer Networks*, 50:1733–1748, August 2006.

6. Chi-Hung Chi, Maarten van Steen, and Craig E. Wills, editors. *Web Content Caching and Distribution: 9th International Workshop, WCW 2004, Beijing, China, October 18-20, 2004. Proceedings*, volume 3293 of *Lecture Notes in Computer Science*. Springer, 2004

7. Craig E. Wills, Gregory Trott, and Mikhail Mikhailov. Using bundles for web content delivery. *Computer Networks*, 42(6):797–817, August 2003.

8. David Finkel, Craig E. Wills, Michael Ciaraldi, Kevin Amorin, Adam Covati, and Michael Lee. An applet-based anonymous distributed computing system. *Internet Research: Electronic Networking Applications and Policy*, 11(1):35–41, 2001.

9. Craig E. Wills and Mikhail Mikhailov. Studying the impact of more complete server information on web caching. *Computer Communications*, 24(2):184–190, February 2001. Published as the Proceedings of the 5th International Web Caching and Content Delivery Workshop.

10. Balachander Krishnamurthy and Craig E. Wills. Analyzing factors that influence end-to-end web performance. *Computer Networks*, 33(1-6):17–32, June 2000. Published as the Proceedings of the Ninth International World Wide Conference.

11. Craig E. Wills, Dorothy Deremer, Renee A. McCauley, and Linda Null. Studying the use of peer learning in the introductory computer science curriculum. *Computer Science Education*, 9(2):71–88, August 1999.

12. Craig E. Wills and Mikhail Mikhailov. Towards a better understanding of web resources and server responses for improved caching. *Computer Networks*, 31(11-16):1231–1243, May 1999. Published as the Proceedings of the Eighth International World Wide Conference.

13. David Finkel, Craig E. Wills, Brian Brennan, and Chris Brennan. Distriblets: Java-based distributed computing on the web. *Internet Research: Electronic Networking Applications and Policy*, 9(1):35–40, 1999. Paper awarded Citation of Excellence (made to less than 10% of reviewed papers) by ANBAR Electronic Intelligence.

14. C.E. Wills, D.C. Brown, B. Dunskus, and J. Kemble. Evaluating network serviceability. *Computer Networks and ISDN Systems*, 30(24):2283–2291, December 1998.

15. Balachander Krishnamurthy and Craig E. Wills. Piggyback server invalidation for proxy cache coherency. *Computer Networks and ISDN Systems*, 30(1-7):185–193, April 1998. Published as the Proceedings of the Seventh International World Wide Conference.

16. Marton E. Balazs, David C. Brown, Peter Bastien, and Craig E. Wills. Graphical presentation of designs: A knowledge intensive design approach. In M. Mantyla, S. Finger, and T. Tomiyama, editors, *Knowledge Intensive CAD*, volume II, pages 173–188. Chapman & Hall, 1997.

17. Craig E. Wills. Process synchronization and IPC. *ACM Computing Surveys*, 28(1):209–211, March 1996. 50th-anniversary issue

18. Craig E. Wills and David Finkel. Scalable approaches to load sharing in the presence of multicasting. *Computer Communications*, 18(9):620–630, September 1995.

19. Craig E. Wills and David Finkel. Experience with peer learning in an introductory computer science course. *Computer Science Education*, 5(2):165–187, 1994.

Professional Publications

1. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2024. *Computing Research News*, 36(1), January 2024.

2. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2023. *Computing Research News*, 35(1), January 2023.

3. Craig E. Wills. 2022 computer science tenure-track faculty hiring outcomes. *Computing Research News*, 34(10), November 2022.

4. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2022. *Computing Research News*, 34(1), January 2022.

5. Craig E. Wills. Updated analysis of current and future computer science needs via advertised faculty searches for 2021. *Computing Research News*, 33(1), January 2021.

6. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2021. *CRA Bulletin*, December 2, 2020.

7. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2020. *Computing Research News*, 32(1), January 2020.

8. Craig E. Wills. 2019 computer science tenure-track faculty hiring outcomes. *Computing Research News*, 31(10), November 2019.

9. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2019. *Computing Research News*, 31(1), January 2019.

10. Craig E. Wills. Outcomes of advertised computer science faculty searches for 2018. *Computing Research News*, 30(7), August 2018.

11. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2018. *Computing Research News*, 30(1), January 2018.

12. Craig E. Wills. Outcomes of advertised computer science faculty searches for 2017. *Computing Research News*, 29(10), November 2017.

13. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2017. *Computing Research News*, 29(1), January 2017.

14. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2016. *Computing Research News*, 28(1), January 2016.

15. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches. *Computing Research News*, 27(1), January 2015.

16. David Finkel and Craig E. Wills. Peer learning assistants in an introductory computer science course. *INPUT, A Newsletter for Computer Science Educators*, pages 5–6, Spring 1995

Refereed Conference Publications

1. Craig E. Wills and Doruk C. Uzunoglu. What ad blockers are (and are not) doing. In *Proceedings of the IEEE Workshop on Hot Topics in Web Systems and Technologies*, Washington, DC USA, October 2016.

2. Craig E. Wills and Can Tatar. Understanding what they do with what they know. In *Proceedings of the Workshop on Privacy in the Electronic Society*, Raleigh, NC USA, October 2012. Acceptance rate: 30%. See technical report for a more detailed version of the paper with illustrative examples.

3. Murad Kaplan, Mihajlo Zeljkovic, Mark Claypool, and Craig E. Wills. How's my network? predicting performance from within a web browser sandbox. In *Proceedings of the IEEE Conference on Local Computer Networks*, pages 525–532, Clearwater, FL USA, October 2012. Acceptance rate: 29%.

4. Wei Zhang and Craig E. Wills. Consideration of processing costs in placing clients of web-based services. In *Proceedings of the IEEE GLOBECOM Conference*, Houston, TX USA, December 2011. Acceptance rate: 37%.

5. Balachander Krishnamurthy, Konstantin Naryshkin, and Craig E. Wills. Privacy leakage vs. protection measures: The growing disconnect. In *Proceedings of the Web 2.0 Security and Privacy Workshop*, pages 1–10, Oakland, CA USA, May 2011. Acceptance rate: 27% for full papers.

6. Balachander Krishnamurthy and Craig E. Wills. Privacy leakage in mobile online social networks. In *Proceedings of the Workshop on Online Social Networks*, pages 1–9, Boston, MA USA, June 2010. USENIX. Acceptance rate: 33%.

7. Wei Zhang, Hangwei Qian, Craig E. Wills, and Michael Rabinovich. Agile resource management in a virtualized data center. In *Proceedings of the First Joint WOSP/SIPEW International Conference on Performance Engineering*, San Jose, California USA, January 2010. ACM. Acceptance rate: $<$25%.

8. Artur Janc, Craig E. Wills, and Mark Claypool. Network performance evaluation in a web browser. In *Proceedings of the IASTED International Conference on Parallel and Distributed Computing and Systems*, pages 370–377, Cambridge, MA USA, November 2009.

9. Alan Ritacco, Craig E. Wills, and Mark Claypool. How's my network? a Java approach to home network measurement. In *Proceedings of the IEEE International Conference on Computer Communications and Networks*, pages 1–7, San Francisco, CA USA, August 2009. Acceptance rate: 30%.

10. Balachander Krishnamurthy and Craig E. Wills. On the leakage of personally identifiable information via online social networks. In *Proceedings of the Workshop on Online Social Networks in conjunction with ACM SIGCOMM Conference*, pages 7–12, Barcelona, Spain, August 2009. Acceptance rate: 37%.

11. Balachander Krishnamurthy and Craig E. Wills. Privacy diffusion on the web: A longitudinal perspective. In *Proceedings of the World Wide Web Conference*, pages 541–550, Madrid, Spain, April 2009. Acceptance rate: 13%.

12. Balachander Krishnamurthy and Craig E. Wills. Characterizing privacy in online social networks. In *Proceedings of the Workshop on Online Social Networks in conjunction with ACM SIGCOMM Conference*, pages 37–42, Seattle, WA USA, August 2008. Acceptance rate: 35%.

13. Hangwei Qian, Elliot Miller, Wei Zhang, Michael Rabinovich, and Craig E. Wills. Agility in virtualized utility computing. In *Proceedings of the 3rd International Workshop on Virtualization Technology in Distributed Computing*, pages 1–8, Reno, NV USA, November 2007. Held in conjunction with ACM/IEEE Super Computing Conference.

14. Mark Claypool, Robert Kinicki, and Craig Wills. Treatment-based traffic signatures. In *Proceedings of the IMRG (IETF Internet Measurement Research Group) Workshop on Application Classification and Identification (WACI)*, Cambridge, MA USA, October 2007.

15. Balachander Krishnamurthy, Delfina Malandrino, and Craig E. Wills. Measuring privacy loss and the impact of privacy protection in web browsing. In *Proceedings of the Symposium on Usable Privacy and Security*, pages 52–63, Pittsburgh, PA USA, July 2007. Acceptance rate: 32%.

16. Paul J. Timmins, Sean McCormick, Emmanuel Agu, and Craig E. Wills. Characteristics of mobile Web content. In *Proceedings of the First IEEE Workshop on Hot Topics in Web Systems and Technologies*, pages 1–10, Boston, MA USA, November 2006.

17. Balachander Krishnamurthy and Craig E. Wills. Generating a privacy footprint on the Internet. In *Proceedings of the ACM SIGCOMM Internet Measurement Conference*, pages 65–70, Rio de Janeiro, Brazil, October 2006. Acceptance rate: 22%.

18. Balachander Krishnamurthy and Craig Wills. Cat and mouse: Content delivery tradeoffs in web access. In *Proceedings of the International World Wide Web Conference*, pages 337–346, Edinburgh, Scotland, May 2006. Acceptance rate: 11%.

19. Craig E. Wills, Mikhail Mikhailov, and Hao Shang. Inferring relative popularity of Internet applications by actively querying DNS caches. In *Proceedings of the ACM SIGCOMM Internet Measurement Conference*, pages 78–90, Miami, Florida, October 2003. Acceptance rate: 30%.

20. Mikhail Mikhailov and Craig E. Wills. Evaluating a new approach to strong web cache consistency with snapshots of collected content. In *Proceedings of the Twelfth International World Wide Web Conference*, pages 599–608, Budapest, Hungary, May 2003. Acceptance rate: 13%.

21. Balachander Krishnamurthy, Craig Wills, Yin Zhang, and Kashi Vishwanath. Design, implementation, and evaluation of a client characterization driven web server. In *Proceedings of the Twelfth International World Wide Web Conference*, pages 138–147, Budapest, Hungary, May 2003. Acceptance rate: 13%.

22. Balachander Krishnamurthy, Craig Wills, and Yin Zhang. Preliminary measurements on the effect of server adaptation for web content delivery. In *Proceedings of the ACM SIGCOMM Internet Measurement Workshop*, pages 323–324, Marseille, France, November 2002. Acceptance rate: 45%. Short paper version accepted.

23. Mikhail Mikhailov and Craig Wills. Exploiting object relationships for deterministic web object management. In *Proceedings of the 7th International Workshop on Web Content Caching and Distribution*, pages 1–16, Boulder, Colorado, August 2002. Acceptance rate: 29%.

24. Balachander Krishnamurthy and Craig Wills. Improving web performance by client characterization driven server adaptation. In *Proceedings of the Eleventh International World Wide Web Conference*, pages 305–316, Honolulu, Hawaii, May 2002. Acceptance rate: 16%.

25. Balachander Krishnamurthy, Craig Wills, and Yin Zhang. On the use and performance of content distribution networks. In *Proceedings of the ACM SIGCOMM Internet Measurement Workshop*, pages 169–182, San Francisco, November 2001.

26. Mark Claypool, David Finkel, and Craig E. Wills. An open source laboratory for operating systems projects. In *ACM SIGCSE/SIGCUE Conference on Innovation and Technology in Computer Science Education*, pages 145–148, Canterbury, England, June 2001. Acceptance rate: 30%.

27. Craig E. Wills, Mikhail Mikhailov, and Hao Shang. N for the price of 1: Bundling web objects for more efficient content delivery. In *Proceedings of the Tenth International World Wide Web Conference*, pages 257–265, Hong Kong, May 2001. Acceptance rate: 20%.

28. Craig E. Wills and Mikhail Mikhailov. Studying the impact of more complete server information on web caching. In *Proceedings of the 5th International Web Caching and Content Delivery Workshop*, pages 184–190, Lisbon, Portugal, May 2000. Acceptance rate: 46%.

29. David Finkel, Craig E. Wills, Kevin Amorin, Adam Covati, and Michael Lee. An applet-based approach to large-scale distributed computing. In *Proceedings of the International Network Conference*, pages 175–182, Plymouth, United Kingdom, July 2000. Acceptance rate: 60%.

30. Michael J. Ciaraldi, David Finkel, and Craig E. Wills. Risks in anonymous distributed computing systems. In *Proceedings of the International Network Conference*, pages 193–200, Plymouth, United Kingdom, July 2000. Acceptance rate: 60%.

31. Balachander Krishnamurthy and Craig E. Wills. Analyzing factors that influence end-to-end web performance. In *Proceedings of the Ninth International World Wide Web Conference*, pages 17–32, Amsterdam, Netherlands, May 2000. Acceptance rate: 20%.

32. David C. Brown, Isabel Cruz, David Finkel, Robert E. Kinicki, and Craig E. Wills. Experiences with the webware, interfaces and networking experimental laboratory. In *Proceedings of the ACM SIGCSE Conference*, pages 387–391, Austin, TX, March 2000. Acceptance rate: 35%.

33. James F. Carlson, David V. Esposito, Nathaniel J. Springer, David Finkel, and Craig E. Wills. Applet-based distributed computing on the web. In *Proceedings of the Workshop on Distributed Computing on the Web*, Rostock, Germany, June 1999

34. Balachander Krishnamurthy and Craig E. Wills. Proxy cache coherency and replacement—towards a more complete picture. In *Proceedings of the 19th IEEE International Conference on Distributed Computing Systems*, pages 332–339, Austin, TX, June 1999. Acceptance rate: 33%.

35. Craig E. Wills and Mikhail Mikhailov. Towards a better understanding of web resources and server responses for improved caching. In *Proceedings of the Eighth International World Wide Web Conference*, pages 153–165, Toronto, Canada, May 1999. Acceptance rate: 16%.

36. Craig E. Wills and Mikhail Mikhailov. Examining the cacheability of user-requested web resources. In *Proceedings of the 4th International Web Caching Workshop*, pages 78–87, San Diego, CA, March/April 1999. Acceptance rate: 51%.

37. Craig E. Wills and Paul Thomas. Exploiting a network charging model to reduce web costs. In *Proceedings of the AusWeb99—The Fifth Australian World Wide Web Conference*, Ballina, NSW Australia, April 1999. Acceptance rate: 50%. Full paper accepted.

38. John H. Hine, Craig E. Wills, Anja Martel, and Joel Sommers. Combining client knowledge and resource dependencies for improved world wide web performance. In *Proceedings of the INET '98 Conference*, Geneva, Switzerland, July 1998. Internet Society.

39. Brian Brennan, Chris Brennan, David Finkel, and Craig E. Wills. Java-based load distribution on the world wide web. In *Proceedings of the International Network Conference*, pages 9–14, Plymouth, United Kingdom, July 1998.

40. Balachander Krishnamurthy and Craig E. Wills. Piggyback server invalidation for proxy cache coherency. In *Proceedings of the Seventh International World Wide Web Conference*, pages 185–193, Brisbane, Australia, April 1998.

41. Craig E. Wills. Group-based software engineering in an introductory computer science course. In *Proceedings of the International Conference on Software Engineering: Education & Practice Conference*, pages 26–33, Dunedin, New Zealand, January 1998. IEEE Computer Society Press.

42. Balachander Krishnamurthy and Craig E. Wills. Study of piggyback cache validation for proxy caches in the world wide web. In *Proceedings of the Symposium on Internet Technologies and Systems*, pages 1–12. USENIX Association, December 1997. Acceptance rate: 27%.

43. Craig E. Wills and David Finkel. Study of a group project model in computer science. In *Proceedings of the ASEE/IEEE Frontiers in Education Conference*, pages 299–303, Pittsburgh, PA, November 1997.

44. I. Russell, M. Dickerson, G. Scragg, M. Towhidnejad, and C. Wills. Novel approaches to the introductory computer science courses. In *Proceedings of the Second Annual Consortium for Computing in Small Colleges: Northeastern Conference*, pages 170–175, Boston, MA, April 1997

45. C.E. Wills, D. Cordes, D. Deremer, B.J. Klein, R.A. McCauley, and L. Null. Application of peer learning to the introductory computer science curriculum. In *Proceedings of the ACM SIGCSE Conference*, pages 373–374, San Jose, CA, March 1997. Panel presentation

46. C.E. Wills and P.F. Bastien. The influence of resource dependencies on distributed scheduling policies for load sharing. In *Proceedings of the International Conference on Parallel and Distributed Systems*, pages 104–109, Dijon, France, September 1996.

47. Craig E. Wills, Robert E. Kinicki, and David Finkel. Networking projects in the undergraduate curriculum. *Journal of Computing in Small Colleges*, 11(4):238–245, March 1996. Based on a presentation at the First Annual Northeastern Small College Computing Conference. West Hartford, CT. April 1996

48. M.E. Balazs, D.C. Brown, P. Bastien, and C.E. Wills. How to present designs. In *Proceedings of the Second Workshop Knowledge Intensive CAD*, Pittsburgh, PA, September 1996. IFIP Working Group 5.2

49. David Finkel and Craig E. Wills. Computer supported peer learning in an introductory computer science course. In *ACM SIGCSE/SIGCUE Conference on Integrating Technology into Computer Science Education*, pages 55–56, Barcelona, Spain, June 1996

50. D.C. Brown, C.E. Wills, B. Dunskus, and J. Kemble. Tennis: A computer network ease of service evaluation system. In *Proceedings of the International Joint Conference on Artificial Intelligence Workshop on AI in Distributed Information Networks*, Montreal, Canada, August 1995

51. Craig E. Wills, Gregory J. Snyder, and Christopher Kmiec. Persistent information retrieval on the Internet. In *Proceedings of the IASTED/ISMM International Conference on Intelligent Information Management Systems*, pages 152–155, Washington, D.C., June 1995

52. Craig E. Wills, D. Giampaolo, and M. Mackovitch. Experience with an interactive attribute-based user information environment. In *Proceedings of the Fourteenth Annual IEEE International Phoenix Conference on Computers and Communications*, pages 359–365, Phoenix, AZ, March 1995

53. Craig E. Wills and Surendar Chandra. Adaptive resource management. In *Proceedings of The International Workshop on Modeling, Analysis and Simulation of Computers and Telecommunications Systems (MASCOTS'95)*, pages 173–177, Durham, NC, January 1995. Acceptance rate: 45%

54. Craig E. Wills, David Finkel, Michael A. Gennert, and Matthew O. Ward. Peer learning in an introductory computer science course. In *Proceedings of the ACM SIGCSE Conference*, pages 309–313, Phoenix, AZ, March 1994

55. Craig E. Wills, Joachim Heck, and Ramin Taraz. Visualization of a user's information space. In *Proceedings of the Computer Science Conference*, pages 94–101, Phoenix, AZ, March 1994. ACM. Acceptance rate: 40%

56. Craig E. Wills, Kirstin Cadwell, and William Marrs. Customization in a unix computing environment. In *Proceedings of the 7th USENIX System Administration Conference*, pages 43–49, Monterey, CA, November 1993

57. J. CaraDonna, N. Paciorek, and C.E. Wills. Measuring lock performance in multiprocessor operating system kernels. In *Proceedings of the Fourth USENIX Symposium on Experiences with Distributed and Multiprocessor Systems*, pages 43–49, San Diego, CA, September 1993

58. Craig E. Wills, Kirstin Cadwell, and William Marrs. Sharing customization in a campus computing environment. In *HCI International '93*, pages 105–115, Orlando, FL, August 1993

59. Craig E. Wills and David Finkel. Load sharing using multicasting. In *Proceedings of the Twelfth Annual IEEE International Phoenix Conference on Computers and Communications*, pages 303–309, Phoenix, AZ, March 1993

60. Craig E. Wills and Shanti Suresh. Resource-driven resource location. In *Proceedings of the 26th Hawaii International Conference on System Sciences*, pages 80–89, Maui, Hawaii, January 1993

61. Craig E. Wills. Strategies for using multicasting to locate resources. In *Proceedings IEEE 16th Conference on Local Computer Networks*, pages 589–598, Minneapolis, MN, October 1991

62. Craig E. Wills. A service execution mechanism for a distributed environment. In *Proceedings of the 9th IEEE International Conference on Distributed Computing Systems*, pages 326–334, Newport Beach, CA, June 1989. Acceptance rate: 33%

63. Craig E. Wills. Locating distributed information. In *Proceedings IEEE Infocom '89*, pages 303–311, Ottawa, Canada, April 1989

64. John T. Korb and Craig E. Wills. Command execution in a heterogeneous environment. In *SIGCOMM '86 Symposium*, pages 68–74, Stowe, VT, August 1986. ACM

Invited Conference Publications

1. Craig Wills, Mark Claypool, Artur Janc, and Alan Ritacco. Development of a user-centered network measurement platform. In *Proceedings of the ISMA Workshop on Active Internet Measurements*, La Jolla, CA USA, February 2010. Invited participant. Sponsored by CAIDA

2. Mark Claypool, Robert Kinicki, and Craig Wills. Treatment-based traffic signatures. In *Proceedings of the IMRG (IETF Internet Measurement Research Group) Workshop on Application Classification and Identification (WACI)*, Cambridge, MA USA, October 2007.

3. Mark Claypool, Robert Kinicki, and Craig Wills. Research resources for network application studies. In *Proceedings of the National Science Foundation Computing Research Infrastructure 2007 PI Meeting*, pages 143–147, Boston, MA USA, June 2007. Also available as Technical Report WPI-CS-TR-07-03.

4. Craig E. Wills and Mikhail Mikhailov. Characterizing web resources and server responses to better understand the potential of caching. In *Web Characterization Workshop*, Cambridge, MA, November 1998. World Wide Web Consortium.

5. Balachander Krishnamurthy and Craig E. Wills. Piggyback cache validation for proxy caches in the world wide web. In *Proceedings of the 2nd Web Caching Workshop*, Boulder, CO, June 1997. National Laboratory for Applied Network Research.

6. Craig E. Wills. User interface design for the engineer. In *Proceedings of Electro/94 International*, pages 415–419, Boston, MA, May 1994

Other Accepted Conference Publications

1. Craig E. Wills. User and resource efficient access to information in mobile and web domains. In *Proceedings of the Second Annual Conference on Telecommunications R&D in Massachusetts*, Lowell, MA, March 1996

2. C. Council, E. Felton, C. Johnson, R. Mason, R. Rubinstein, and C. Wills. A virtual reality world builder. In *Proceedings of CONVERGENCE: The Fifth Biennial Symposium on the Arts and Technology*, pages 115–121, New London, CT, March 1995

3. Craig E. Wills. Making a user's information space more visible. In *Proceedings: First Annual Conference on Telecommunications R&D in Massachusetts, Volume I*, pages 75–85, Lowell, MA, October 1994

Other Publications

1. Craig E. Wills. U.S. federal election competitiveness and vote importance. Technical Report WPI-CS-TR-23-04, Computer Science Department, Worcester Polytechnic Institute, July 2023. Available via SSRN.

2. Craig E. Wills. American college influence—a geographical perspective. Technical Report WPI-CS-TR-23-03, Computer Science Department, Worcester Polytechnic Institute, May 2023. Available via SSRN.

3. Craig E. Wills. Self-identified college peer groups and derived rankings. Technical Report WPI-CS-TR-23-01, Computer Science Department, Worcester Polytechnic Institute, January 2023. Available via SSRN.

4. Craig E. Wills and Chayanne Sandoval-Williams. Migration of American college students. Technical Report WPI-CS-TR-22-06, Computer Science Department, Worcester Polytechnic Institute, 2022. Available via SSRN.

5. Craig E. Wills. A data-driven approach to evaluate the worthiness of markets for professional sports franchises. Technical Report WPI-CS-TR-21-02, Computer Science Department, Worcester Polytechnic Institute, February 2021. Available via SSRN.

6. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2022. Technical Report WPI-CS-TR-21-07, Computer Science Department, Worcester Polytechnic Institute, November 2021.

7. Abigail R. Roane, Chaiwat Ekkaewnumchai, Connor W. McNamara, Kyle Richards, Gabor Sarkozy, and Craig E. Wills. A graph-based approach to better sports rankings. Technical Report WPI-CS-TR-19-03, Computer Science Department, Worcester Polytechnic Institute, June 2019.

8. Alan Ritacco and Craig Wills. Peering into the home network. Technical Report WPI-CS-TR-18-02, Computer Science Department, Worcester Polytechnic Institute, April 2018.

9. Craig E. Wills. Geographical connectivity in the United States. Technical Report WPI-CS-TR-17-01, Computer Science Department, Worcester Polytechnic Institute, June 2017. Available via SSRN.

10. Craig E. Wills. Impact of STEM focus on graduation rates in ranking colleges. Technical Report WPI-CS-TR-16-05, Computer Science Department, Worcester Polytechnic Institute, November 2016.

11. Craig E. Wills. A new perspective on United States geography: The closest locations to the most states. Technical Report WPI-CS-TR-16-04, Computer Science Department, Worcester Polytechnic Institute, August 2016. Available via SSRN.

12. Craig E. Wills and Doruk C. Uzunoglu. What ad blockers are (and are not) doing. Technical Report WPI-CS-TR-16-02, Computer Science Department, Worcester Polytechnic Institute, June 2016.

13. Craig E. Wills. The competitiveness of games in professional sports leagues. Technical Report WPI-CS-TR-16-01, Computer Science Department, Worcester Polytechnic Institute, February 2016.

14. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches for 2016. Technical Report WPI-CS-TR-15-03, Computer Science Department, Worcester Polytechnic Institute, November 2015.

15. Craig E. Wills. Analysis of current and future computer science needs via advertised faculty searches. Technical Report WPI-CS-TR-14-06, Computer Science Department, Worcester Polytechnic Institute, November 2014.

16. Craig E. Wills. Analysis of U.S. News graduation rate performance for technological institutions. Technical Report WPI-CS-TR-14-05, Computer Science Department, Worcester Polytechnic Institute, September 2014.

17. Casey Barney, Anthony Caravella, Michael Cullen, Gary Jackson, and Craig E. Wills. Update: Evaluating talent acquisition via the NFL draft. Technical Report WPI-CS-TR-14-03, Computer Science Department, Worcester Polytechnic Institute, May 2014.

18. Casey Barney, Anthony Caravella, Michael Cullen, Gary Jackson, and Craig E. Wills. Evaluating talent acquisition via the NFL draft. Technical Report WPI-CS-TR-13-01, Computer Science Department, Worcester Polytechnic Institute, March 2013.

19. Craig E. Wills and Can Tatar. Understanding what they do with what they know. Technical Report WPI-CS-TR-12-03, Computer Science Department, Worcester Polytechnic Institute, August 2012. This is a longer version of the October 2012 Workshop on Privacy in the Electronic Society paper.

20. Murad Kaplan, Mihajlo Zeljkovic, Mark Claypool, and Craig Wills. JavaScript and Flash overhead in the web browser sandbox. Technical Report WPI-CS-TR-10-14, Computer Science Department, Worcester Polytechnic Institute, April 2012.

21. Balachander Krishnamurthy and Craig E. Wills. Privacy diffusion on the web: A longitudinal perspective (updated graphs), October 2009. Submitted as public comment to Federal Trade Commission Exploring Privacy Roundtable Series.

22. Mark Claypool, Robert Kinicki, and Craig Wills. User-centered network measurement. Technical Report WPI-CS-TR-07-08, Computer Science Department, Worcester Polytechnic Institute, August 2007.

23. Craig E. Wills. Cinderella and the big dance. Technical Report WPI-CS-TR-06-01, Computer Science Department, Worcester Polytechnic Institute, April 2006.

24. Paul J. Timmins and Craig E. Wills. Using future context in personal information retrieval. Technical Report WPI-CS-TR-05-17, Computer Science Department, Worcester Polytechnic Institute, November 2005

25. Hao Shang and Craig E. Wills. Exploiting flow relationships to improve performance of networked applications. Technical Report WPI-CS-TR-04-13, Computer Science Department, Worcester Polytechnic Institute, May 2004.

26. Hao Shang and Craig E. Wills. Using related domain names to improve DNS performance. Technical Report WPI-CS-TR-03-35, Computer Science Department, Worcester Polytechnic Institute, December 2003.

27. Craig E. Wills and Nitin John. A client-based study of clustered and distributed web content. Technical Report WPI-CS-TR-02-27, Computer Science Department, Worcester Polytechnic Institute, October 2002.

28. Balachander Krishnamurthy, Craig Wills, and Yin Zhang. On the use and performance of content distribution networks. Technical Report TD-52AMHL, AT&T Labs – Research, August 2001.

29. Mikhail Mikhailov and Craig E. Wills. Change and relationship-driven content caching, distribution and assembly. Technical Report WPI-CS-TR-01-03, Computer Science Department, Worcester Polytechnic Institute, March 2001.

30. Craig E. Wills, Mikhail Mikhailov, and Hao Shang. N for the price of 1: Bundling web objects for more efficient content delivery. Technical Report WPI-CS-TR-00-26, Computer Science Department, Worcester Polytechnic Institute, November 2000.

31. Craig E. Wills and Hao Shang. The contribution of DNS lookup costs to web object retrieval. Technical Report WPI-CS-TR-00-12, Computer Science Department, Worcester Polytechnic Institute, July 2000.

32. Mikhail Mikhailov and Craig E. Wills. Embedded objects in web pages. Technical Report WPI-CS-TR-00-05, Computer Science Department, Worcester Polytechnic Institute, March 2000.

33. Craig E. Wills and Mikhail Mikhailov. Studying the impact of more complete server information on web caching. Technical Report WPI-CS-TR-99-36, Computer Science Department, Worcester Polytechnic Institute, November 1999.

34. Craig E. Wills and Mikhail Mikhailov. Exploiting object relationships for web caching. Technical Report WPI-CS-TR-99-29, Computer Science Department, Worcester Polytechnic Institute, October 1999.

35. Craig E. Wills and Mikhail Mikhailov. Examining the cacheability of user-requested web resources. Technical Report WPI-CS-TR-99-01, Computer Science Department, Worcester Polytechnic Institute, January 1999.

36. Craig E. Wills and Mikhail Mikhailov. Towards a better understanding of web resources and server responses for improved caching. Technical Report WPI-CS-TR-98-27, Computer Science Department, Worcester Polytechnic Institute, December 1998.

37. Craig E. Wills, Dorothy Deremer, Renee A. McCauley, and Linda Null. Studying the use of peer learning in the introductory computer science curriculum. Technical Report WPI-CS-TR-97-11, Computer Science Department, Worcester Polytechnic Institute, September 1997.

38. Craig E. Wills and Joel Sommers. Prefetching on the web through merger of client and server profiles, June 1997.

39. Joel Sommers and Craig E. Wills. Prefetching on the web using client and server profiles. Technical Report WPI-CS-TR-97-2, Computer Science Department, Worcester Polytechnic Institute, June 1997

40. C.E. Wills, M.T. Murray, and R. Thangarajah. Resource-efficient policies for information transfer in a mobile environment. Technical Report WPI-CS-TR-96-3, Computer Science Department, Worcester Polytechnic Institute, December 1996

Patents

1. B. Krishnamurthy, A. Bender, and C.E. Wills. Protection of personally identifiable information. United States Patent No. 11,003,782 issued May 11, 2021. Continuation of U.S. application Ser. No. 15/631,087 filed Jun. 23, 2017

2. B. Krishnamurthy, A. Bender, and C.E. Wills. Tailored protection of personally identifiable information. United States Patent No. 10,579,804 issued March 3, 2020. Continuation of U.S. application Ser. No. 14/874,493 filed Oct. 5, 2015

3. B. Krishnamurthy, A. Bender, and C.E. Wills. Tailored protection of personally identifiable information. United States Patent No. 9,721,108 issued August 1, 2017. Continuation of U.S. application Ser. No. 12/624,012 filed Nov. 23, 2009

4. B. Krishnamurthy, A. Bender, and C.E. Wills. Tailored protection of personally identifiable information. United States Patent No. 9,172,706 issued October 27, 2015. Provisional patent claim (12/624,012) filed November 23, 2009. Continuation in September 2015

5. B. Krishnamurthy and C.E. Wills. Identifying and remedying secondary privacy leakage. United States Patent No. 8,839,443 issued September 16, 2014. Provisional patent claim (12/288,071) filed October 16, 2008

6. B. Krishnamurthy and C.E. Wills. Method and apparatus for providing web privacy. United States Patent No. 8,601,591 issued December 3, 2013. Provisional patent (12/569,491) filed September 29, 2009

7. B. Krishnamurthy and C.E. Wills. Method for improving web performance by adapting servers based on client cluster characterization. United States Patent No. 7,296,089 issued November 13, 2007. Provisional patent claim (60/346366) filed Nov. 9, 2001. Full claim filed with U.S. Patent and Trademark Office on July 2002

8. B. Krishnamurthy and C.E. Wills. Method and apparatus for cache validation for proxy caches. Patent Number 6,578,113 issued June 10, 2003. Provisional patent claim (60/047,380) filed June 2, 1997. Full claim filed with U.S. Patent and Trademark Office on December 30, 1997

In the News

1. Isha Trivedi. Where do students go to college? a new study looks state by state. *The Chronicle of Higher Education*, June 2, 2022.

2. Alexander C. Kafka. The discipline that is transforming higher ed: The computer-science boom is straining colleges. but it could save some, too. *The Chronicle of Higher Education*, April 15 2020.

3. Jen A. Miller. What does it take to prepare graduates for a new world of work? *EdTech*, May 16 2019.

4. Roberta Kwok. Junior AI researchers are in demand by universities and industry. *Nature*, April 23 2019.

5. William Terdoslavich. Tech industry really needs professors and teaching talent. *Dice*, April 30 2018.

6. Craig Wills. Steps to curb exposure of your data. *Worcester Telegram & Gazette*, April 22 2018.

7. The value of learning to code. *Boston Globe*, August 2 2015. Boston Globe Magazine Education+Careers supplement

8. Ellen O'Leary. Massachusetts schools strive to increase access to coding courses. *Boston.Com*, October 23 2014.

9. Aliya Sternstein. Taking a flier on big data. *Government Executive*, May 28 2013.

10. Shalise Manza Young. Patriots' draft strategy backed by the numbers. *Boston Globe*, May 12 2013.

11. Better value in 2nd-round picks. *ESPN*, April 26 2013. Story also appeared in Sports Illustrated, Washington Post, Boston Globe, Worcester News Tonight and The Atlantic. Radio Interviews on Chicago, Orlando and Boston Sports Talk Radio shows.

12. Jennifer Toland. NFL draft: WPI study analyzes value of picks. *Worcester Telegram & Gazette*, April 26 2013.

13. Jennifer Valentino-Devries and Jeremy Singer-Vine. They know what you're shopping for. *Wall Street Journal*, December 7 2012.

14. Office of the Privacy Commissioner of Canada. News release: Popular websites in canada disclosing personal information, September 25 2012.

15. Byron Acohido. Web tracking has become a privacy time bomb. *USA Today*, August 3 2011.

16. Sruthi Krishnan. How your visits to sites are tracked. *The Hindu*, December 25 2010.

17. Ira Flatow. Internet privacy: Who's tracking you online? *National Public Radio Science Friday*, December 17, 2010.

18. Byron Acohido and Jon Swartz. Do not track could revolutionize online ad industry. *USA Today*, December 13 2010.

19. Geoffrey A. Fowler and Emily Steel. Myspace, apps leak user data. *Wall Street Journal*, October 23 2010.

20. Julia Angwin. The web's new gold mine: Your secrets. *Wall Street Journal*, July 30 2010.

21. Bill Snyder. You are here: Scary new location privacy risks. *CIO*, June 28 2010.

22. Rebecca Myles. Radio interview on wbai evening news. *WBAI, Pacifica Radio 99.5 FM in New York City*, May 26 2010.

23. Michael Hiltzik. Is your privacy secure online? there's no way to tell. *Los Angeles Times*, June 06 2010.

24. Scott Duke Harris. Facebook overhaul simplifies privacy controls. *San Jose Mercury News*, May 27 2010.

25. Rebecca Myles. Radio interview on wbai evening news. *WBAI, Pacifica Radio 99.5 FM in New York City*, May 26 2010.

26. Emily Steel and Jessica E. Vascellaro. Facebook, myspace confront privacy loophole. *Wall Street Journal*, May 21 2010.

27. Lucy Soto. Companies use users' web information to their advantage. *Atlanta Journal-Constitution*, February 12 2010.

28. Erika Morphy. Creepy ways your social media data can be used. *TechNewsWorld*, January 21 2010.

29. Wendy Davis. Social networks may 'leak' personally identifiable information. *MediaPost News*, September 25 2009.

30. Jaikumar Vijayan. Social networking sites leaking personal information to third parties, study warns. *ComputerWorld*, September 23 2009. This syndicated article also appeared in the San Francisco Chronicle, InfoWorld and MacWorld.

31. Peter Eckersley. How online tracking companies know most of what you do online (and what social networks are doing to help them). *Electronic Frontier Foundation Deeplinks Blog*, September 21 2009.

32. Robert Westervelt. Social network privacy study finds identity link to cookies. *SearchSecurity.com*, August 26 2009.

33. Thomas Claburn. Social networks leak personal information. *InformationWeek*, August 24 2009.

34. Miguel Helft. Google is top tracker of surfers in study. *The New York Times Bits Blog*, June 2 2009.

Professional Activities/Honors

1. Recognized as an Academic Advisor with a significant number of academic advisees by Committee on Advising and Students Life. February 2004

2. Recognized as an Academic Advisor with a significant number of academic advisees by Committee on Advising and Students Life. February 2003

3. Selected as an Outstanding Academic Advisor by Committee on Advising and Students Life. March 2000

4. Selected as an honorary member of the WPI Upsilon Pi Epsilon (UPE) computer science honor society. Fall 1995. Quoting from the invitation letter from Scott Salvidio, chapter president, "Your election as an honorary member of Upsilon Pi Epsilon signifies the high regard we have for your work in the field of computer science as a faculty member of WPI. The level of dedication and hard work you exhibit while educating the members of the computer science student body is second to none. Considering the nature of your position in the computer science department we feel that your contributions to the WPI CS community are all the more deserving of special recognition."

5. Member, Association for Computing Machinery (ACM)

6. Member, IEEE Computer Society

Professional Chairs and Editorships

1. Associate Editor, ACM Transactions on Internet Technology, July 2000–July 2009. One of the founding Associate Editors

2. Deputy Program Chair, Ninth International Workshop on Web Caching and Content Delivery, October 2004, Beijing, China

3. Conference Program Committee Co-Chair, 13th International World Wide Web Conference, May 2004, New York City, New York

4. Program Committee Vice-Chair Performance and Reliability, 12th International World Wide Web Conference, May 2003, Budapest, Hungary

5. Panels Chair, Program Committee Member, 11th International World Wide Web Conference, May 2002, Honolulu, Hawaii

6. Faculty Posters Coordinator, ACM SIGCSE 2002, Feb/Mar 2002, Covington, Kentucky, USA

7. Program Committee Deputy Vice-Chair, 10th International World Wide Web Conference, May 2001, Hong Kong

Additional Program Committees

1. Program Committee for ACM/IEEE Hot Topics on Web of Things (HotWot) 2020, November 2020, San Jose USA
2. Intelligent Systems and Infrastructure Track Program Committee of The Web Conference 2020, April 2020, Taipai, Taiwan
3. Program Committee for ACM/IEEE Hot Topics on Web of Things (HotWot) 2019, November 2019, Washington, DC USA
4. Intelligent Systems and Infrastructure Track Program Committee of The Web Conference 2019, May 2019, San Francisco, CA USA
5. Program Committee for ACM/IEEE Hot Topics on Web of Things (HotWot) 2018, October 2018, Bellevue, WA USA
6. Program Committee for HotWeb 2017, October 2017, San Jose, CA USA
7. Program Committee for HotWeb 2016, October 2016, Washington, DC USA
8. Program Committee for HotWeb 2015, November 2015, Washington, DC USA
9. Program Committee for the Web-Based Systems and Applications track of the 33rd IEEE International Conference on Distributed Computing Systems, July 2013, Philadelphia, PA USA
10. Program Committee of the Conference on Web Privacy Measurement, May/June 2012, Berkeley, CA USA
11. Program Committee of the W3C Workshop on Web Tracking and User Privacy, April 2011, Princeton, NJ USA
12. Program Committee of the Performance, Scalability and Availability track for the 2010 International World Wide Web Conference, April 2010, Raleigh, NC USA
13. Program Committee for Workshop on Online Social Networks ACM SIGCOMM Conference, August 2009, Barcelona, Spain
14. Program Committee of the Performance and Scalability track for the 2009 International World Wide Web Conference, April 2009, Madrid, Spain
15. Program Committee of the IEEE International Conference on Self-Adaptive and Self-Organizing Systems, October 2008, Venice, Italy
16. Program Committee of the 2008 Passive and Active Measurement Conference, April 2008, Cleveland, OH USA
17. Program Committee of the Performance and Scalability track for the 2008 International World Wide Web Conference, April 2008, Beijing, China

Significant Academic Service

1. Invited Member, Provost's Program Performance Committee Chaired by Steve Taylor and Debora Jackson, 2020-21
2. Co-Chair, Search Committee Humanities & Arts Department Head, 2018-19
3. Member, WPI Academic Space Committee , 2015-18
4. Faculty Member, WPI Board of Trustees Budget & Finance Committee , 2014-17
5. Member, WPI Strategic Planning Pillar 6 on Enhancing Capacity, 2014-15
6. Member, WPI Committee on Appointments and Promotions, 2010-11. Elected April, 2010
7. Member, WPI Committee on Tenure and Academic Freedom, 2004-08. Chair, 2006-2007. Secretary, 2005-2006. Elected April, 2004
8. Program Committee Member, Computing Research Association Conference, June 2006, Snowbird, Utah
9. Member, WPI Committee on Academic Policy, 2002-04. Elected April, 2002
10. Member, WPI Committee on Academic Policy, 1998-99. Elected April, 1998
11. Chair, WPI Committee on Academic Operations, 1995-96. Elected May, 1995. Elected to committee April, 1993 and served June, 1993–June, 1996

Fellowships and Grants

1. Craig Shue, Craig E. Wills, Robert Walls, and Lorenzo De Carli. Cybercorps SFS renewal: Supporting the federal government workforce, January 1, 2021 – December 31, 2025. National Science Foundation Scholarships for Service, 1941415. $4,836,782. Awarded August 2020
2. Suzanne Mello-Stark and Craig E. Wills. GenCyber 2018 WPI Cybersecurity Camp, June 1, 2018 – August 31, 2018. National Science Foundation Scholarships for Service, 1503742. $99,428. Awarded April 2018
3. Suzanne Mello-Stark and Craig E. Wills. WPI GenCyber student summer camp, June 1, 2017 – August 31, 2017. National Science Foundation Scholarships for Service, 1503742. $99,687. Submitted November 2016
4. Suzanne Mello-Stark and Craig E. Wills. 2016 GenCyber, June 1, 2016 – August 31, 2016. National Science Foundation Scholarships for Service, 1503742. $99,769. Submitted November 2015. Awarded April 2016
5. Kathryn Fisler, Craig Shue, Susan Landau, and Craig E. Wills. Scholarship track: Scholarships for service at WPI, January 1, 2015 – December 31, 2019. National Science Foundation Scholarships for Service, 1503742. $2,831,124. Submitted October 2014. Awarded December 2014 for $4.4M

6. Mark Claypool and Craig E. Wills. Measuring DNS performance, January, 2011–October, 2011. Dynamic Network Services, Inc. $55,297

7. Craig E. Wills, Mark Claypool, James Doyle, and Matthew Ward. MRI-R2: Development of a user-centered network measurement platform, May 1, 2010 – April 30, 2013. National Science Foundation Major Research Instrumentation Program Recovery and Reinvestment. 0959441. $391,582

8. Craig E. Wills. CSR-PDOS: virtual machines meet application clusters: A highly responsive global utility computing platform for internet applications, May, 2009–August, 2009. Research Experience for Undergraduates (REU) Supplement to collaborative proposal with Case-Western Reserve University. 0937144. $8,000

9. Craig E. Wills, Mark Claypool, and Robert Kinicki. A dual-core experimental systems laboratory, August, 2007. Equipment Donation from Intel Corporation. $23,959

10. Michael Rabinovich and Craig E. Wills. CSR-PDOS: virtual machines meet application clusters: A highly responsive global utility computing platform for internet applications, August, 2006–July, 2009. National Science Foundation CSR PDOS. 0615079. Collaborative proposal with Case-Western Reserve University. WPI portion $238,380

11. Mark L. Claypool, Robert E. Kinicki, and Craig E. Wills. Research resources for network application studies, July, 2004–August, 2007. National Science Foundation CNS CISE Research Resources. 0423362. $39,203

12. Craig E. Wills. Exploiting object relationships for more deterministic management of distributed objects, Sept, 2000–Aug, 2003. National Science Foundation Operating Systems and Compilers Program of the CCR Division in the CISE Directorate. 9988250. $66,141

13. Mark L. Claypool, David Finkel, and Craig E. Wills. Teaching systems courses with an open source laboratory, June, 2000–May, 2003. National Science Foundation Course, Curriculum and Laboratory Improvement Grant DUE9980803. $69,912

14. Craig E. Wills. Impact of electronic commerce on the internet infrastructure, September, 1999–May, 2000. Arrowpoint Communications, Inc. $33,453

15. C.E. Wills, D. Finkel, G.T. Heineman, R.E. Kinicki, and M.O. Ward. The webware, interfaces and networking experimental laboratory, June, 1997–May, 1999 (extended to May, 2000). National Science Foundation Instrumentation and Laboratory Improvement Grant DUE9751132. $44,256

16. C.E. Wills. Application of peer learning to the introductory computer science curriculum, June, 1996–May, 1998 (extended to May, 2000). National Science Foundation Undergraduate Faculty Enhancement Grant DUE9554706. $56,521

17. D.C. Brown, C.E. Wills, D. Finkel, N.I. Hachem, R.E. Kinicki, and M.O. Ward. The enhancement of digital's technology exchange program, June, 1995–May, 1996. Digital Equipment Corporation. $88,960

18. D.C. Brown and C.E. Wills. Continuation of tennis project: Computer network ease of service evaluation, January, 1995–December, 1995. Digital Equipment Corporation. $83,770

19. C.E. Wills. A networked, platform-independent audio support system, October, 1994–May, 1995. Vicorp Interactive Systems. $19,004

20. D.C. Brown and C.E. Wills. Computer network serviceability evaluation system, September, 1993–August, 1994. Digital Equipment Corporation. $68,784