

Walker McMillan White

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Degrees

08/2000 PhD (Mathematics), Cornell University.
08/1998 MS (Computer Science), Cornell University.
06/1993 BA (Mathematics), Dartmouth College.

Academic Appointments

09/2025–Present Teaching Professor, Cornell University
06/2014–08/2025 Senior Lecturer, Cornell University
06/2011–05/2014 Lecturer, Cornell University
06/2008–Present Director, Game Design Initiative at Cornell
06/2005–05/2011 Research associate, Cornell University
06/2001–08/2004 Visiting assistant professor, Cornell University.
(summers)
08/2000–06/2005 Assistant professor, University of Dallas.

Awards

2020 Tau Beta Pi Professor of the Year
2016 Stephen H. Weiss Provost's Teaching Fellow
2016 Fiona Ip Li and Donald Li Teaching Award for the School of Engineering
2015 CEAA Academic Achievement Award
2014 Tau Beta Pi Professor of the Year
2012 James and Mary Tien Teaching Award for the School of Engineering
2012 James and Marsha McCormick Advising Award for the School of Engineering

Grants

08/2010–08/2012 Co-PI (with Georgia Tech, U. of Utah, and U. of Michigan), NSF grant IIS-1048413, "Collaborative Research: Computational Thinking Olympiad".
08/2007–08/2011 Principal Investigator, NSF grant IIS-000492612: "Design Methodologies for Scalability in Computer Games".
03/2007–06/2006 Senior Researcher, AFOSR grant FA9550-07-1-0437, "Scalable Simulations of Dynamics of Relationships".
06/2006–06/2008 Co-PI, NSF grant IIS-0621438, "A Formal Approach to Data Stream Processing".

Publications

Recent Articles

- “Leveling Up by Design: Games Design + Technical/Engineering Communication = Innovative Games and High-Functioning Teams”, with T. Nathans-Kelly. European Society for Engineering Education Annual Conference. Copenhagen. September, 2018.
- “PathViewer: Visualizing Pathways through Student Data”, with Y. Wang and E. Anderson. *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*. Denver. May, 2017.
- “Crystallize: An Immersive, Collaborative Game for Second Language Learning”, with G. Culbertson, E. Andersen, D. Zhang, and M. Jung. *Proceedings of the 2016 ACM Symposium on Computer-Supported Cooperative Work and Social Computing*. San Francisco. February, 2016.
- “Making Time-stepped Applications Tick in the Cloud”, with T. Zou, G. Wang, M. Salles, D. Bindel, A. Demers, J. Gehrke. *Proceedings of the 2011 ACM Symposium on Cloud Computing*. Cascais, Portugal. October 2011.
- “Fast Checkpoint Recovery Algorithms for Frequently Consistent Applications”, with T. Cao, M. Salles, B. Sowell, Y. Yue, J. Gehrke, A. Demers. *Proceedings of the 2011 ACM SIGMOD International Conference on Management of Data*. Athens, Greece, June 2011.
- “Behavioral Simulations in MapReduce”, with G. Wang, M. Salles, B. Sowell, X. Wang, T. Cao, A. Demers, J. Gehrke. *Proceedings of the 26th International Conference on Very Large Data Bases*. Singapore, September 2010.
- “Scaling Transportation Simulations Through Declarative Processing”, with T. Cao, A. Demers, O. Gao, J. Gehrke, C. Koch, B. Sowell, M. Salles, G. Wang, X. Wang. *Next Generation Data Mining Summit: Dealing with the Energy Crisis, Greenhouse Emissions, and Transportation Challenges*. Baltimore, MD, October 2009.
- “Scaling Simulations Through Declarative Processing”, with T. Cao, A. Demers, O. Gao, J. Gehrke, C. Koch, B. Sowell, M. Salles, G. Wang, X. Wang. *Microsoft eScience Workshop*. Pittsburgh, PA, October 2009.
- “An Evaluation of Checkpoint Recovery for Massively Multiplayer Online Games,” with M. Salles, T. Cao, B. Sowell, A. Demers, J. Gehrke, and C. Koch. *Proceedings of the 25th International Conference on Very Large Data Bases*. Lyon, France, August 2009.
- “Scalability for Virtual Worlds,” with N. Gupta, A. Demers, J. Gehrke, and P. Unterbrunner. *Proceedings of the 25th International Conference on Data Engineering*. Shanghai, China, March 2009.
- “From Declarative Languages to Declarative Processing for Computer Games,” with A. Demers, J. Gehrke, N. Gupta, H. Li, and B. Sowell. *Proceedings of the 4th Biennial Conference on Innovative Data Systems Research*, Pacific Grove, California, January 2009.
- “Declarative Processing for Computer Games” with B. Sowell, J. Gehrke, and A. Demers. *Proceedings of the ACM SIGGRAPH Sandbox Symposium*, Los Angeles, California, August 2008.
- “Pseudoprime factorizations of integer matrices,” with D. Wallace. *Linear Algebra and its Applications*. Vol. 429, No. 1, July 2008, pages 142-155.
- “SGL: A Scalable Language for Data Driven Games (Demonstration Paper),” with R. Albright, A. Demers, J. Gehrke, N. Gupta, R. Keilty, H. Lee, G. Sadowski, and B. Sowell. *Proceedings of the 2008 ACM SIGMOD International Conference on Management of Data*. Vancouver, Canada, June 2008.
- “Scaling Games to Epic Proportions,” with A. Demers, C. Koch, J. Gehrke, and R. Rajagopalan. *Proceedings of the 2007 ACM SIGMOD International Conference on Management of Data*. Beijing, China, June 2007.

Invited Talks

- “Software Development as a Writing Seminar”, Computer Science Department, State University of New York Buffalo, June 2017.
- “Interdisciplinary Game Development Courses at Cornell”, Frontiers of Engineering Education, National Academy of Engineering, Irvine, California, October 2013.
- “Scalable Declarative Processing in Digital Games”, Department Colloquium, Computer Science Department, Pennsylvania State University, November 2010.
- “Game Education: Project Management & Software Design”, Special Seminar, Computer Science Department, Pennsylvania State University, November 2010.
- “Game Design: Serious Education in ‘Unserious’ Games”, GECS (Games in Engineering and Computer Science), NSF Workshop, June 2010.
- “Creating and Managing an Academic Games Program” (Panel Chair), Foundations of Digital Games, April 2009.
- “Scaling Games to Epic Proportions”, Department Colloquium, Computer Science Department, Brown University, November 2008. “Applying Database Technology to Games and Simulations”, ESP Platform Group, Microsoft Corporation, May 2008.

Professional Service

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|-------------|--|
| 2011 | Program committee, GAS 2011 (1st Games and Software Engineering Workshop). |
| 2007 – 2010 | Program committee, Annual Legacy of R. L. Moore Conference |
| 2005 – 2009 | Chairman, Association of Symbolic Logic (ASL) Committee on Education. |
| 2009 | Program committee, FDG 2009 (1st Foundations of Digital Games). |
| 2008 | Organizer, Research Roundtable, Austin Game Developers Conference, 2008. |
| 2008 | Program committee, ICDE 2009 (International Conference on Data Engineering). |
| 2004 | Member, Association of Symbolic Logic (ASL) Committee on Education. |
| 2004 | Program committee, SIGKDD 2004 (Knowledge Discovery and Data Mining). |

University Service

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| 2014 – Present | Advisor, CuAppDev Project Team. |
| 2010 – Present | Advisor, ACM Programming Competition Team. |
| 2007 – Present | Advisor, Cornell Digital Gaming Alliance (DGA). |
| 2024 – Present | Teaching Professor Search Committee, Committee Chair. |
| 2019 – 2023 | Faculty Senate, CIS RTE Representative. |
| 2012 – 2017 | Faculty Reader, Arts & Sciences Undergraduate Admissions. |
| 2011 – 2015 | Freshman Advisor for the School of Engineering |