LEWIS B. BAUMSTARK, JR.

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DEPARTMENT OF COMPUTING AND MATHEMATICS
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RESEARCH INTERESTS

Reverse Engineering, Computer Science Education

EDUCATION

- PhD, Electrical & Computer Engineering, Georgia Institute of Technology, Atlanta, GA, Dec. 2004
- MS, Electrical & Computer Engineering, Georgia Institute of Technology, Atlanta, GA, Dec. 2001
- BS, Electrical & Computer Engineering, Tennessee Technological University, Cookeville, TN, Dec. 1998

PROFESSIONAL EXPERIENCE

University of West Georgia

- Aug. 2020 – present: Professor of Computer Science (tenured)
- Aug. 2010 – Aug. 2020: Associate Professor of Computer Science (tenured)
- Jan. 2005 – Aug. 2010: Assistant Professor of Computer Science

TEACHING AREAS

- Undergraduate
  - Software Engineering
  - Introductory Programming
  - Operating Systems
  - Networking
  - System Administration
  - Computer Architecture
  - Web Development
  - Video Game Development
- Graduate
  - Software Engineering
  - Operating Systems
  - Networking
  - System Administration
  - Web Development

JOURNAL ARTICLES

L. Baumstark and M. Orsega, "Quantifying Introductory CS Students' Iterative Software Process By Mining Version Control Repositories", *Journal of Computing Sciences in Colleges*, Vol. 31, No. 6., pp 97-104, June 2016.

L. Baumstark and L. Wills, "Retargeting Sequential Image-Processing Programs for Data-Parallel Execution," *IEEE Trans. on Software Engineering* (invited paper for special issue on Reverse Engineering), Vol. 31, No. 2, pp. 116-136, Feb. 2005.

R. Janka, L. Wills, and **L. Baumstark**, "Virtual Benchmarking and Model Continuity in Prototyping Embedded Multiprocessor Signal Processing Systems," *IEEE Trans. on Software Engineering*, Vol. 28, No. 9, pp. 832-846, Sept. 2002.

CONFERENCE PROCEEDINGS

Lewis Baumstark. 2023. Automated Evaluation of the Structure of Student-Written Unit Tests. In Proceedings of the 2023 ACM Southeast Conference (ACMSE 2023). Association for Computing Machinery, New York, NY, USA, 56–63. https://doi.org/10.1145/3564746.3587002

Jonathan Corley, Ana Stanescu, **Lewis Baumstark**, and Michael C. Orsega. 2020. Paper Or IDE? The Impact of Exam Format on Student Performance in a CS1 Course. In Proceedings of the 51st ACM Technical Symposium on Computer Science Education (SIGCSE '20). Association for Computing Machinery, New York, NY, USA, 706–712. https://doi.org/10.1145/3328778.3366857

M. Orsega and **L. Baumstark**, "The Use of Version Control in CS2", in *Proc. of ACM MidSE 2017*, pp. 71, Gatlinburg, TN, Nov. 9-10, 2017.

Lewis Baumstark and Michael Orsega. 2016. Quantifying introductory CS students' iterative software process by mining version control system repositories. J. Comput. Sci. Coll. 31, 6 (June 2016), 97–104.

Lewis Baumstark and Edwin Rudolph. 2013. Automated online grading for virtual machine-based systems administration courses. In Proceeding of the 44th ACM technical symposium on Computer science education (SIGCSE '13). Association for Computing Machinery, New York, NY, USA, 477–482. https://doi.org/10.1145/2445196.2445340

L. Baumstark and L. Wills, "Multidimensional Dataflow-based Parallelization for Multimedia Instruction Set Extensions," *Proc. of 2006 Int'l Conference on Parallel Processing Workshops*, pp. 319-326, Columbus, OH, Aug. 14-16, 2006.

L. Baumstark and L. Wills, "Dynamic Estimation of Data-Level Parallelism in Nested Loop Structures: A Preliminary Report," *Proc. of 1st Int'l Workshop on Program Comprehension through Dynamic Analysis (PCODA'05)*, Pittsburgh, PA, pp. 28-31, Nov. 10, 2005. Available as Technical Report 2005-12, Dept. of Mathematics & Computer Science, Universiteit Antwerpen, Antwerpen, Belgium.

L. Baumstark, M. Guler, and L. Wills, "Extracting an Explicitly Data-Parallel Representation of Image-Processing Programs," *In Proc. of the Working Conf. on Reverse Engineering 2003 (WCRE '03)*, Victoria, BC, pp. 24-34, Nov. 2003.

L. Baumstark, and L. Wills, "Exposing Data-Level Parallelism in Sequential Image Processing Algorithms," In *Proc. of the Ninth Working Conf. on Reverse Engineering (WCRE '02*), Richmond, VA, pp. 245-254, Nov. 2002.

L. Wills, T. Taha, **L. Baumstark**, and S. Wills, "Estimating Potential Parallelism for Platform Retargeting," In *Proc. of the Ninth Working Conf. on Reverse Engineering (WCRE '02),* Richmond, VA, pp. 55-64, Nov. 2002.

POSTER PRESENTATIONS

Lewis Baumstark. 2011. Visualizing the complexity of the United States code. In Proceedings of the 49th Annual Southeast Regional Conference (ACM-SE '11). Association for Computing Machinery, New York, NY, USA, 336–337. https://doi.org/10.1145/2016039.2016135

Lewis Baumstark. 2013. A combat robotics course: programming meets computer-aided design and fabrication. In Proceeding of the 44th ACM technical symposium on Computer science education (SIGCSE '13). Association for Computing Machinery, New York, NY, USA, 729. https://doi.org/10.1145/2445196.2445406

PROFESSIONAL MEMBERSHIPS

- Association for Computing Machinery (ACM)
- ACM Special Interest Group in Computer Science Education (SIGCSE)

PROFESSIONAL SERVICE

- General Co-Chair of 4th International Symposium on Embedded Computing, Niagra, Canada, May 21, 2007.
- Session chair: "Embedded Hardware," 3rd Int'l Workshop on Embedded Computing (IWEC-06), Columbus, OH, Aug. 14, 2006.
- Session facilitator: "Dynamic analysis challenges and metrics", Workshop on Program Comprehension through Dynamic Analysis (PCODA'05), Pittsburgh, PA, Nov. 10, 2005.
- Program Committee, Workshop on Program Comprehension through Dynamic Analysis (PCODA'06)
- Reviewer: IEEE Transactions on Very Large-Scale Integration Systems, Special Section on Configurable Computing. 2008.
- SIGCSE Program Committee: 2016, 2018
- ACMSE Program Committee: 2017, 2019, 2020, 2022, 2023, 2024

UNIVERSITY SERVICE

- SACS Peer-Reviewer, 2019
- UWG Ad-hoc Committee for Revising Tenure & Promotion Guidelines, Spring 2011
- UWG Faculty Senate, 2008-2011
- UWG Faculty Senate Ad-hoc Rules Subcommittee, 2008-2009
- UWG Learning Resources Committee, 2008-2011. Chair 2009-2011.
- UWG Sponsored Operations Committee, 2009.
- UWG Retention-Progression-Graduation (RPG) Guide, Summer 2008-2010

- Faculty sponsor, ACM student chapter, 2005 – present
- Faculty sponsor, Upsilon Pi Epsilon, 2012 – present
- UWG Ad-hoc Committee on Tenure & Promotion Guidelines, Spring 2011

COLLEGE SERVICE

- CACSCI Executive Committee, 2023-2024
- CACSCI Ad-hoc Virtual Reality Committee, 2023
- CACSCI Faculty Advisory Committee, 2021-2023
- CACSCI Promotion and Tenure Committee, 2021-2022
- COSM Dean's Search Committee, 2016
- COSM Advisory Committee, 2016-2018
- COSM Executive Committee, 2018-2019
- IMPACT Robotics workshop for Junior High students, July 2011.
- COSM Tenure and Promotion Committee, 2011-2012
- COSM Ad-hoc Curriculum Committee, 2011

DEPARTMENT SERVICE

- Post-Tenure Review Committee, 2023
- Tenure & Promotion and Post-Tenure Review Revisions Ad-hoc Committee, 2022-2023
- Undergraduate Curriculum Committee (chair), 2023-2024
- Promotion and Tenure Committee, 2021
- Developed BS in Computing program, 2021
- ABET Coordinator, 2019-2020
- Industry Advisory Committee, Spring 2007
- Faculty Search Committee, 2006 – 2015, 2022. Chair Fall 2008 – 2015.
- Bachelor of Arts Ad-hoc Committee, 2006.
- Faculty advisor, ACM Programming Contest team, 2005
- Graduate Curriculum Committee, Spring 2005, Fall 2009-Spring 2010.
- Undergraduate Curriculum Committee, Spring 2005-present, Chair 2005-2008.
- Assessment Subcommittee, 2009.
- Advisor: Combat Robotics Team, Fall 2010-2015
- Systems Sequence Revision Subcommittee Chair, 2015

HONORS & AWARDS

- UWG College of Science and Mathematics Excellence in Teaching Award, 2015-2016
- Outstanding Undergraduate Teacher of the Year in Computer Science (2007, 2010, 2013, 2016, 2019)
- Outstanding Graduate Teacher of the Year in Computer Science (2009, 2015, 2018)

UNDERGRADUATE STUDENT PROJECTS ADVISED

- Hector Martin-Cantero, "File Format Reverse Engineering", 2007
- Jim Bullington, "File Format Reverse Engineering", 2007
- Lee Allen and Eric Hebert, "BombSpark (videogame)" (2008)
- Justin Chester, "Independent Game Development" (2009)

- Lee Allen, "Architecture Prototyping" (2009)
- LaCarl Dansby, Derrick Banks, and Alejunard Bourne, "Game Design" (2010)
- Brandon Shrewsbury, "Kinecting the Disabled" (2011)
  - Presented at *13th International ACM SIGACCESS Conference on Computers and Accessibility)*, received **First Place in Undergraduate Category**
  - Received **Honorable Mention** in Microsoft's Imagine Cup
- Kenny Marshall and Ed Bala, "3D Printing" (2012)
- Matthew Stucki, "Mobile App Development on Windows 8" (2012)
- Anthony Kyle Bond, "Raspberry Pi Cluster" (2013)
- Alex Teichner, "Augmented Reality" (2013)
  - Poster presentation at ACMSE'14
- Drew Justus, "Automation Systems" (2013)
- Brian West, "Robot Coordination" (2013)
- Lewis Christmas, "A $50 Fully-Programmable Hobby Robot" (2013)
- Brian West, "Swarm Algorithms" (2014)
- Ayaan Kazerouni, "Computing Accessibility: a Fall-detecting Mobility Walker" (2014)
  - received Second Place in the 2015 COSM Research Day
- Carlos Harry and David Siver, "Computing Accessibility" (2014)
- Terry Holt, "Minisumo Robotics" (2014)
- Timothy Bergquist, "Living with Epilepsy: A Technological Solution"
  - presented at the UWG Undergraduate Research Conference April 2017
- Mark Couch, "Cybersecurity" (2017)
- Nathan Trippe, "Game Development" (2017)
- David Wilkinson, "WWW tool for underserved areas" (2017)
- Joey Turner, "Cryptographic Journal App" (2017)
- Corey Thornton, "Image Processing & App Development" (2018)
- Felton Lewis, "Source Code Analysis" (2018)
- Jeremiah Liscum, "Security Vulnerabilities" (2021)
- Stephen Carriger and Cody Boynton, "Virtual Reality" (2023)

GRADUATE STUDENT PROJECTS ADVISED

- Josh Westmoreland, "Debugging in Dynamic Languages" (2009)
- Josh Westmoreland, "Legal Code Visualization" (2009)
- Dan Grotefend, MS Thesis, *Obligation and Reciprocity Assessment in Social Simulations of Autonomous Agents: the Stigmergic Underpinnings of Human Interaction and Social Cooperation?*" (2009)
- Jason Levinson, "Legal Code Web Service" (2010)