Dr. Trevor Michael Tomesh

Assistant Professor
University of Wisconsin - River Falls

Ph.D. Computer Science

Contact Information
Email: trevor.tomesh@uwrf.edu

Education

PhD in Computer Science

- *University of Regina*
- Class of 2020
- Thesis Title: "Toward a Theory of Interactive Hardware"
- Supervisor: Dr. Daryl Hepting

BSc in Physics

- *University of Wisconsin River Falls*
- Class of 2011
- Minor in Mathematics
- Member of Sigma Pi Sigma Physics Honors Society
- Ronald E. McNair Scholar

Research

Publications

1. Tomesh, T. and Hepting, D. (2017). Environmental Sensing with Recycled Materials. O'Reilly Media.
2. Tomesh, Trevor Michael, and Daryl H. Hepting. "DIY Game Console Development." Proceedings of the first ACM SIGCHI annual symposium on Computer-human interaction in play. ACM, 2014.
3. Tomesh, Trevor M. "Teaching Programming with Python and the Blender Game Engine."
4. Tomesh, Trevor, and Colin Price. "Design and Development of Physics Simulations in the Field of Oscillations and Waves Suitable for K-12 and Undergraduate Instruction Using Video Game Technology." APS Meeting Abstracts. 2011.
5. Tomesh, Trevor. "Computational Simulation of a Simple Pendulum Driven by a Natural Chaotic Function." APS March Meeting Abstracts. 2010.

General Research Interests

My research interests lie at the intersection of computing and other fields. I am particularly focused on interactive computing systems, cybernetic approaches to human-computer interaction, and "humane" computing system design, such as human-readable databases. Additionally, I have a keen interest in systems theory, games, and simulations as well as applications for LLMs.

I am dedicated to involving students in research endeavors.

Graduate Research in Educational Game Development (2011-2012)

University of Worcester, Computing Department, Worcester, England

- Developed a working prototype of an educational game for high school physics students using the Blender Game Engine.
- Conducted interviews with students to assess their knowledge and experiences with educational games and their interest in game-based learning.
- Presented research at various conferences in Europe and the UK.

Interim Research Assistant (2010)

University of Worcester, Computing Department, Worcester, England

- Designed and developed simulations in the fields of waves and oscillations using video game technology for physics education.
- Utilized the Unreal Tournament 2004 engine to model oscillators for K-12 and undergraduate physics classrooms.
- Evaluated model fidelity by comparing to theoretical and computational models.

Researcher, Research Experience for Undergraduates Program (2009)

Vanderbilt University, Physics Department, Nashville, Tennessee

- Computationally modeled the effects of black hole kicks on the density of globular clusters using N-body simulations on the ACCRE supercomputing cluster.
- Developed a density profiling program in FORTRAN for analyzing the density of globular clusters.
- Produced movies of the physical and density evolution of globular clusters using Supermongo.
- Enhanced N-body simulations with routines for random gravitational wave recoils in merging black hole pairs.

Research Assistant, UW River Falls Radio Telescope (2009)

UW River Falls Physics Department, River Falls, Wisconsin

- Constructed a functional Radio JOVE radio telescope for receiving radio signals from Jupiter's magnetosphere.
- Processed, analyzed, and visualized the received data.

Service

Committees

Member - UWRF Student Support Services Coach Search and Screen Committee (2023)

- Participated in the search for a new academic coach for the Student Support Services at UWRF.

Chair - University of Regina Coop Committee (2022)

- The Coop Committee oversees the review and approval of coop position applications and evaluates coop reports.

Student Representative - University of Regina Creative Technologies Committee (2017-2018)

- Participated in joint meetings of the Arts and Computer Science departments to shape the direction of the Creative Technologies program.

Peer-Review

1. Mouhoub, Malek, et al., eds. Recent Trends and Future Technology in Applied Intelligence: 31st International Conference on Industrial Engineering and Other Applications of Applied Intelligent Systems, IEA/AIE 2018, Montreal, QC, Canada, June 25-28, 2018, Proceedings. Vol. 10868. Springer, 2018.
2. Amine, Abdelmalek, et al., eds. Computational Intelligence and Its Applications: 6th IFIP TC 5 International Conference, CIIA 2018, Oran, Algeria, May 8-10, 2018, Proceedings. Vol. 522. Springer, 2018.

Other

Faculty Advisor - UWRF Turning Point USA (2023 - Present)

- Providing guidance, mentorship, and support to student activists in establishing and maintaining a TPUSA chapter on campus, coordinating events, promoting conservative values, advocating for limited government and free-market principles, and maintaining compliance with university policies, thus contributing to the organization's mission of empowering the next generation of conservative leaders.

Teaching

Assistant Professor (Tenure Track) University of Wisconsin - River Falls (2022 - Present)

Courses Taught:

- CIDS 161 - Programming I (Python)
- CIDS 162 - Programming II (Java)
- CIDS 235 - Programming Paradigms (Java)
- CIDS 225 - Web Development I (HMTL + CSS)
- CIDS 325 - Web Development II (JavaScript)
- CIDS 120 - Technology Ethics

Term Lecturer - University of Regina (2021 - 2022)

Courses Taught:

- CS 205 - Introduction to Multimedia Systems
- CS 455 / 855 - Mobile Computing
- CS 280 - Risk and Reward in the Information Society (Fall 2021)
- CS 890AC - Data Analysis from the Internet (Fall 2021)

Sessional Lecturer - Lakehead University (2021)

Courses Taught:

- COMP 2340 - Mobile Computing (Winter 2021)
- COMP 5112 GDE - Research Methodology (Summer 2021)

Sessional Lecturer - University of Regina (2014 - 2021)

Courses Taught:

- CS 110 - Programming and Problem Solving (Spring 2021)
- CS 207 - Building Interactive Gadgets (2014 - 2021)
- CS 427 / 827 - Computer Audio (Fall 2018)
- CS 330 - Intro to Operating Systems (Spring 2018)
- CS 290 AK - Topics in Data Acquisition and Analysis (Winter 2018)
- CS 290 AJ - Interactive Simulation Methods (Fall 2017, Winter 2019)
- CS 829 - Information Theory and Applications (Summer 2019)
- CS 890AC - Data Analysis from the Internet