

# James W. Orr

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## Education

- 2013 – 2019      Ph.D. in Computer Science, Washington University in St. Louis,  
Dissertation titled “Period and Computational Elasticity for Adaptive  
Real-Time Systems.” Degree awarded August 2019.  
Advisor: Professor Chris Gill
- 2009 – 2013      B.S. *summa cum laude* in Mathematics and Computer Science,  
Mississippi College, Degree awarded May 2013.

## Professional Experience

- 2019 – Present      Lecturer in Computer Science and Engineering,  
Washington University, St. Louis, MO.
- 2019 – 2020      Postdoctoral Research Associate in Computer Science and Engineering,  
Washington University, St. Louis, MO.  
Advisor: Professor Sanjoy Baruah
- 2013 – 2019      Research Assistant in Computer Science and Engineering,  
Washington University, St. Louis, MO.  
Advisor: Professor Chris Gill
- 2012 – 2013      Programming Intern, Southern Farm Bureau Life Insurance Company,  
Jackson, MS.
- 2009 – 2012      Computer Science Help Lab, Mississippi College, Clinton, MS.

## Teaching

- Fall 2020      **E81 CSE 522S: Advanced Operating Systems**, Washington University  
in St. Louis
- E81 CSE 132: Introduction to Computer Engineering**, Washington  
University in St. Louis

Fall 2016                    **E81 CSE 522S: Advanced Operating Systems**, Washington University in St. Louis, Co-taught with Professor Chris Gill. Responsibilities included giving lectures and developing course material including assignments and labs.

### **Guest Lecturer**

Spring 2019                E81 CSE 522S: Advanced Operating Systems  
Spring 2019                E81 CSE 520S: Real-Time Systems  
Spring 2018                E81 CSE 522S: Advanced Operating Systems  
Fall 2017                    E81 CSE 422S: Operating Systems Organization

### **Publications**

#### **Refereed Journal Papers**

1. J. Orr and S. Baruah, "Algorithms for Implementing Elastic tasks on Multiprocessor Platforms: A Comparative Evaluation," *Real-Time Systems Journal*. 2021
2. J. Condori, A. Maghareh, J. Orr, H.-W. Li, H. Montoya, S. Dyke, C. Gill, and A. Prakash, "Exploiting Parallel Computing to Control Uncertain Nonlinear Systems in Real-Time," *Experimental Techniques*, Special Issue on New Frontiers and Innovative Methods for Hybrid Simulation, pp. 1-15, Springer, 2020.
3. J. Orr, C. Gill, K. Agrawal, J. Li, and S. Baruah, "Elastic Scheduling for Parallel Real-Time Systems", *Leibniz Transactions on Embedded Systems (LITES)* 6(1), pp. 05:1-05:14, May 2019.

#### **Refereed Conference and Workshop Papers**

1. J. Orr, J. Condori, C. Gill, S. Baruah, K. Agrawal, S. Dyke, A. Prakash, I. Bate, C. Wong, and S. Adhikari, Elastic Scheduling of Parallel Real-Time Tasks with Discrete Utilizations, 28th International Conference on Real-Time Networks and Systems (RTNS '20), June 2020.
2. J. Orr and S. Baruah, "Multiprocessor Scheduling of Elastic Tasks," 27<sup>th</sup> International Conference on Real-Time and Networks and Systems (RTNS '19), Toulouse, France, November 2019. **Outstanding Paper Award.**
3. C. Gill, J. Orr, and S. Harris, "Supporting Graceful Degradation through Elasticity in Mixed-Criticality Federated Scheduling," 6<sup>th</sup> International Workshop on Mixed Criticality Systems (WMC) at RTSS, Nashville, TN, December 2018.
4. J. Orr, C. Gill, K. Agrawal, S. Baruah, C. Cianfarani, P. Ang, and C. Wong, "Elasticity of Workloads and Periods of Parallel Real-Time Tasks," 26<sup>th</sup> International Conference on Real-Time Networks and Systems (RTNS '18), Poitiers, France, October 2018.

## Talks

1. J. Orr, “Towards Multi-Time-Stepping in Real-Time Hybrid Simulation”, Washington University in St. Louis Department of Computer Science and Engineering Department Student Seminar (DSS), April 29, 2016.
2. J. Orr, “Towards Generating Cache Scheduling Policies from MDPs”, Washington University in St. Louis Department of Computer Science and Engineering Department Student Seminar (DSS), April 10, 2015.

## Professional Service

1. Reviewer for Springer Journal of Scheduling (2020, 2021).
2. Sub-reviewer for Euromicro Conference on Real-Time Systems (ECRTS) 2020.
3. Reviewer for IEEE Transactions on Computers (2019).
4. Reviewer for ACM Transactions on Parallel Computing (2018).

## Students Supervised

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| 2019 | Sabina Adhikari (REU), Chris Wong (REU).                         |
| 2018 | Phyllis Ang (REU), Christian Cianfarani (REU), Chris Wong (REU). |

## Honors and Awards

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| 2018       | Student Travel Grant to RTSS 2018, Nashville, TN.  |
| 2013       | Perry Academic Award –Highest Undergraduate Academic Award Given, Mississippi College, Clinton, MS.      |
| 2012       | Mortar Board National Honor Society, Mississippi College, Clinton, MS.                                   |
| 2012, 2010 | Carl Brewer Memorial Award for Excellence in Math and Computer Science, Mississippi College, Clinton MS. |
| 2011       | James Burnside Award for Excellence in Mathematics, Mississippi College, Clinton, MS.                    |
| 2009-2013  | Presidential Scholarship, Mississippi College, Clinton, MS.  |

## **Departmental and University Service**

1. Computer Engineering Master's Program Director, 2020-Present
2. Computer Engineering Committee, 2020-Present