

# Jay Lawrence Adams

Department of Electrical and Computer Engineering  
The University of Akron  
jla36@uakron.edu

## Education

- Ph.D.     Electrical and Computer Engineering  
          The University of Akron, August 2009  
          *Dissertation:* Hankel Operators for Fractional-Order Systems  
          *Co-Advisor:* Tom T. Hartley  
          *Co-Advisor:* Robert J. Veillette
- M.S.     Electrical Engineering  
          Youngstown State University, December 2004
- B.S.E.E   Electrical Engineering  
          Grove City College, May 2002

## Employment

- 08/2010 - present    Visiting University Lecturer, University of Akron  
                          Circuits I Lab, Computer Systems, Control System Theory,  
                          Digital Logic Design, Embedded Systems Interfacing,  
                          Programming for Engineers, Senior Design Seminar  
                          Tools for Computer Engineering  
                          Tools Lab for Electrical and Computer Engineering
- 01/2009 - 05/2010   Associate Lecturer, University of Akron  
                          Digital Communication, Digital Logic Design Lab,  
                          Embedded Systems Interfacing, Nonlinear Control,  
                          Programming for Engineers,
- 09/2004-12/2008    Teaching Assistant, University of Akron  
                          Control Systems I Lab, Control Systems II Lab,
- 05/2007-08/2007    Research Assistant, University of Akron  
                          Applied Mathematics
- 01/2007-05/2007    Classroom Teacher, University of Akron  
                          Active Circuits
- 09/2003-05/2004    Teaching Assistant, Youngstown State University  
                          Digital Logic Design Lab, Electronics I Lab

## Book Chapters

1. Wang, Y, TT Hartley, CF Lorenzo, JL Adams, JE Carletta, and RJ Veillette, Modeling Ultracapacitors and Fractional-Order Systems,” *New Trends in Nanotechnology and Fractional Calculus Applications*, Springer 2010

2. Adams, JL, TT Hartley, and CF Lorenzo, “Complex Order-Distributions Using Conjugated-Order Differintegrals,” *Advances in Fractional Calculus*, Springer 2007

## Refereed Journal Articles

1. Hartley TT, RJ Veillette, JL Adams, and CF Lorenzo, “Energy storage and loss in fractional-order circuit elements,” *Circuits, Devices & Systems, IET*, April 2015.
2. Adams, JL, A Madanayake, and LT Bruton, “Approximate realization of fractional-order 2-D IIR frequency-planar filter,” *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, September 2013.
3. Adams, JL, RJ Veillette, and TT Hartley, “Conjugate-order systems for signal processing: stability, causality, boundedness, compactness,” *Signal, Image, and Video Processing*, March 2012.
4. Adams, JL, TT Hartley, and RJ Veillette, “Hankel-Norm Estimation for Fractional-Order Systems Using the RayleighRitz Method,” *Computers and Mathematics with Applications*, March 2010.
5. Adams, JL, TT Hartley, and LI Adams, “A Solution to the Fundamental Linear Complex-Order Differential Equation,” *Advances in Engineering Software*, January 2010.
6. Lorenzo, CF, TT Hartley, and JL Adams, “The Inverted Initialization Problem for Fractional-Order Derivatives,” *Physica Scripta*, October 2009.
7. Adams JL, TT Hartley, and CF Lorenzo, “Identification of Complex Order-Distributions,” *Journal of Vibrational Control*, Volume 14, Number 9-10, September 2008.
8. Adams, JL and TT Hartley, “Hankel Operators for Fractional-Order Systems,” *Journal Européen des Systèmes Automatisés*, September 2008.
9. Adams, JL and TT Hartley, “Finite-Time Controllability of Fractional-Order Systems,” *Journal of Computational and Nonlinear Dynamics*, Volume 3, Number 2, April 2008.

## Conference Papers

1. Hartley, TT, RJ Veillette, CF Lorenzo, and JL Adams, “On the Energy Stored in Fractional-Order Electrical Elements” *Proc of DETC 2015*, Boston, MA, August 2015.
2. Adams, JL, RJ Veillette, TT Hartley, and LI Adams, “Restrictions on the Inverse Laplace Transform for Fractional-Order Systems” *Proc of ICFDA 2014*, Catania, Italy, June 2014.

3. Lorenzo, CF, TT Hartley and JL Adams, "Time-Varying Initialization and Corrected Laplace Transform of the Caputo Derivative," *Proc of IFAC FDA 2013*, Grenoble, France, February 2013.
4. Madanayake A, C Wijenayake, RM Joshi, JL Adams, J Grover, J Carletta, TT Hartley, and T Ogunfunmi, "Teaching Freshmen VHDL-Based Digital Design", *Proc of IEEE Intl. Symp. on Circuits and Systems (ISCAS2012)*, Soul, Korea, 2012.
5. Adams JL, RJ Veillette, and TT Hartley, "Initialization of Fractional-Order Systems Using the Hankel Operator," *Proc of ASME DETC*, Washington DC, August 2011.
6. Gambone, T, TT Hartley, CF Lorenzo, JL Adams, and RJ Veillette, "An Experimental Validation of the Time-Varying Initialization Response in Fractional-Order Systems," *Proc of ASME DETC*, Washington DC, August 2011.
7. Adams JL, RJ Veillette, and TT Hartley, "Estimates of Conjugate-Order Hankel Norms," *Proc of IFAC FDA 2010*, Badajoz, Spain, October 2010.
8. Adams JL, RJ Veillette, and TT Hartley, "Compactness of Hankel Operators for a Class of Fractional-Order Systems," *Proc of IFAC FDA 2010*, Badajoz, Spain, October 2010.
9. Adams JL, RJ Veillette, and TT Hartley, "Conditions for Stable and Causal Conjugate-Order Systems," *Proc of IEEE International Symposium on Industrial Electronics*, Bari, Italy, July 2010.
10. Adams JL, RJ Veillette, and TT Hartley, "Estimation of the Hankel Singular Values for Fractional-Order Systems," *Proc of ASME DETC*, San Diego, CA, September 2009.
11. Adams JL, TT Hartley and RJ Veillette, "Estimation of Eigenvalues for Fractional-Order Systems," *Proc of IFAC FDA*, Ankara, Turkey, November 2008.
12. Lorenzo CF, TT Hartley, and JL Adams, "Inverted Initialization of Fractional-Order Derivatives," *Proc of IFAC FDA*, Ankara, Turkey, November 2008.
13. Wang Y, TT Hartley, CF Lorenzo, JL Adams, JC Carletta, and RJ Veillette "A Fractional-Order Model for Ultracapacitor Long-Term Behavior," *Proc of IFAC FDA*, Ankara, Turkey, November 2008.
14. Adams, JL and TT Hartley, "Finite-Time Controllability of Fractional-Order Systems", *Proc of ASME DETC*, Las Vegas, NV, September 2007.
15. Adams, JL and TT Hartley, "Chaos in a System of "Order" Less Than Two," *Proc of IASTED Modern Nonlinear Theory*, Montreal, Canada, May 2007.
16. Adams, JL, TT Hartley, LI Adams, and CF Lorenzo, "A Fundamental Solution to the Complex-Order Differential Equation," *Proc of ECT*, Tenerife, September 2006.
17. Adams, JL, TT Hartley, and CF Lorenzo, "System Identification Using Complex Order-Distributions," *Proc of IFAC FDA*, Porto, Portugal, July 2006.

18. Jiang, CX, JL Adams, TT Hartley, and JC Carletta, "Hardware Implementation of Fractional-Order Systems as Infinite Impulse Response Filters," *Proc of IFAC FDA*, Porto, Portugal, July 2006.
19. Hartley, TT, JL Adams, and CF Lorenzo, "Conjugated Order-Distributions," *Proc of ASME DETC*, Long Beach, CA, September 2005.
20. Hartley, TT, CF Lorenzo, and Jay Adams, "Complex Conjugate-Order Differintegrals," *Proc of ASME DETC*, Long Beach, CA, September 2005.

## Professional-Related Service

1. Advisor for the 2013-2014 Senior Design Team: Mr. Ping Pong
2. Advisor for the 2012-2013 Senior Design Team: Intelligent Ground Vehicle Competition
3. Advisor for the 2011-2012 Senior Design Team: Autonomous Blimp
4. Advisor for the 2010-2011 Senior Design Team: Quadrotor
5. Co-author of the Digital Hardware Systems section of the Electrical and Computer Engineering qualifying exam at the University of Akron for Fall 2009 - Fall 2012
6. Member of IEEE