

CARLOTTA A. BERRY

Rose-Hulman Institute of Technology
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RESEARCH INTERESTS

My technical research focuses on the development of human-robot interfaces (HRI) for mobile robot applications. Typically, mobile robot interfaces are very complex and difficult to use. In order to create more user-friendly HRIs, it is necessary to use techniques developed in human-computer interaction and human factors research. My ultimate goal is to create mobile robot user interfaces that increase situational awareness, decrease mental workload as well as being effective, efficient, and easy to use. My engineering education research focuses on engaging science and engineering students in multidisciplinary projects using robotics and developing programs to increase the recruitment and retention of women and minorities in engineering.

EDUCATION

Vanderbilt University, Nashville, Tennessee

Ph.D., Department of Electrical and Computer Engineering, May 2003
Dissertation: *Enhancing a Human-Robot Interface Using a Sensory EgoSphere*
Advisors: Dr. K Kawamura, Dr. J.A. Adams

Wayne State University, Detroit, Michigan

Master of Science in Electrical Engineering, Control Systems, December 1996
Thesis: *Minimum Energy Control and It's Possible Applications in Repetitive and Adaptive Feedback*
Advisor: Dr. Andrzej Olbrot

Georgia Institute of Technology, Atlanta, Georgia

Bachelor of Science in Electrical Engineering, December 1993

Spelman College, Atlanta Georgia

Bachelor of Science in Mathematics, May 1992

PROFESSIONAL EXPERIENCE

Rose-Hulman Institute of Technology, Department of Electrical and Computer Engineering, Terre Haute, Indiana, Associate Professor, Co-Director of ROSE-BUD Program
August 2012 – present
Director of Multidisciplinary Minor in Robotics,
August 2012 – June 2017

Rose-Hulman Institute of Technology, Department of Electrical and Computer Engineering, Terre Haute, Indiana, Assistant Professor, August 2006 - July 2012
Director of Multidisciplinary Minor in Robotics, August 2011 - present
Co-Director of ROSE-BUD Program, August 2008 –July 2012

Tennessee State University, Department of Electrical and Computer Engineering, Nashville, Tennessee, Assistant Professor, August 2003 – July 2006

MASTER'S ADVISOR

Summer 2016	Wei Zhen Modular Design of an Educational Robotics Platform
Summer 2011	Juergen Kunzmann The design, modeling, and control of a 4-Rotor aerial robot
Summer 2006	Martinez Chatman The development of a multi-modal human-robot interface

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Selected JOURNAL PUBLICATIONS:

1. **Berry, C.A.**, "Lessons Learned Teaching Electrical Circuits Online", *Journal of Online Engineering Education*, Vol. 6, No. 2, 2015.
2. **Berry, C.A.**, "Teaching a First Course in Human-Robot Interaction", *Computers in Education Journal*, Vol. 6, No. 4, pp. 100-111, 2015.
3. Boutell, M., **Berry, C.**, Fisher, D., and Chenoweth, S., "A Multidisciplinary Robotics Minor", *Computers in Education Journal*, Vol. 1, No. 3, pp. 67 - 80, 2010.
4. **Berry, C .A.**, "Mobile Robotics: A tool for application-based integration of multidisciplinary undergraduate concepts and research", *Computers in Education Journal*, Vol. 1 ,No. 3, pp. 102 - 111, 2010.

BOOK:

Berry, C.A., "Mobile Robotics Inspirations for Multidisciplinary Study", Morgan & Claypool, 2012.

BOOK CHAPTERS:

1. **Berry, C.A.**, and Walter, D.J., "DC Circuit and Transient Analysis", *Second Edition of the Industrial Electronics Handbook*, Wilamowski/Irwin (eds.), Taylor and Francis, 2010.
2. **Berry, C.A.**, and Walter, D.J., "AC Circuit Analysis", *Second Edition of the Industrial Electronics Handbook*, Wilamowski/Irwin (eds.), Taylor and Francis, 2010.
3. **Berry, C.A.**, and Walter, D.J., "Applications of Operational Amplifiers", *Second Edition of the Industrial Electronics Handbook*, Wilamowski/Irwin (eds.), Taylor and Francis, 2010.

MAGAZINE:

Berry, C.A., Remy, S.L., and Rogers, T.E., "Robotics for All Ages: A Standard Robotics Curriculum for K-16", *IEEE Robotics & Automation Magazine*, Vol. 23, No. 2, June 2016, pp.40-46. ISSN 1070-9932.

NEWSPAPER OP-ED:

1. **Berry, C.A.**, "Wouldn't Take Nothing for My Journey Now: My Path to Engineering Education", *Diverse Issues in Higher Education*, June 18, 2015.
2. **Berry, C.A.**, "The Power of An Example", *ASEE Prism*, February 2015.
3. **Berry, C.A.**, "They Call Me Doctor Berry", *The New York Times*, November 1, 2014.

Selected CONFERENCE PUBLICATIONS (Peer-Reviewed)

1. **Berry C.A.**, Chang, D., Miller, C., "From LEGO to Arduino: Enhancement of ECE Freshman Design with Practical Applications", *Proceedings of the 2016 American Society of Engineering Education (ASEE) 123rd Annual Conference and Exposition*, New Orleans, LA, June 26 - 29, 2016.
2. **Berry, C.A.**, "Teaching a First Course in Human-Robot Interaction", *Proceedings of the 2015 ASEE Conference and Exposition*, Seattle, WA, June 14-17,2015.
3. **Berry, C.A.**, "Teaching an Electrical Circuits Course Online", *Proceedings of the 2015 ASEE Conference and Exposition*, Seattle, WA, June 14-17,2015.
4. **Berry, C.A.**, Cox, M.F., and Main, J.B., "An examination of the numbers: African American Female Faculty in Engineering", *Proceedings of the 2014 American Society of Engineering Education (ASEE) Conference and Exposition*, Indianapolis, IN, June 15-18, 2014.
5. Kunzmann, J., **Berry C.A.**, "Investigations in the control of a four-rotor aerial robot", *Proceedings of the 2nd IASTED International Conference on Robotics (ROBO 2011)*, Pittsburgh, PA, November 7 - 9, 2011.
6. **Berry C.A.** "Mobile Robotics: A tool for application-based integration of multidisciplinary undergraduate concepts", *Proceedings of the 2010 American Society of Engineering Education (ASEE) Conference and Exposition*, Louisville, KY, June 20 - 23, 2010.

GRANTS

2011	NSF SSR-RC Grant (\$38,000) - Hexacopter Design
2009	NSF S-STEM Grant (\$600, 000) – Rose Building Undergraduate Diversity (ROSE-BUD) Scholarship Program
2007	Rose-Hulman Eli Lilly Faculty Success Grant (\$100,000) – Multidisciplinary Educational Robotics Initiative (MERI)

REFERENCES FURNISHED UPON REQUEST