

# Cressel D. Anderson

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<http://www.cressel.net>  
(publications available on website)

## GOAL

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Application engineer position involving process control or motion control projects

## EDUCATION

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**M.S.**, Georgia Institute of Technology  
2008, Electrical and Computer Engineering, 3.91/4.0

**B.S.**, University of North Carolina at Charlotte  
2006, Electrical and Computer Engineering, 4.0/4.0 *Summa Cum Laude*

## EXPERIENCE

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**Healthcare Robotics Laboratory** Supervisor: Prof. Charlie Kemp  
**Research Assistant**, May 2007 – present

Researched technologies in the Healthcare Robotics Laboratory that may help improve quality of life for the disabled and elderly. Contributed, as the principle student investigator, to the development of a laser pointer interface for robots. Collaborated on the design of two robotic systems and associated software for assistive mobile manipulation in human environments. Cooperated with other lab members to conduct tests in which patients from Emory University's ALS Center operated the robot El-E. This robot has been covered by media outlets such as Popular Mechanics, the New York Times, the Associated Press, CNN, the Technology Review, Engadget, and others. [Videos](#) are available.

**Nol-Tec Systems Southeast** Supervisor: Paul Vogt  
**Engineer**, 2006

- ◇ Programmed PLC's to automate manufacturing processes.
- ◇ Contributed to the design of a  $S0_x$  reducing dry sorbent injection system for a coal plant.
- ◇ Completed piping and instrument diagrams.
- ◇ Responded to an emergency service call to repair a motion control system damaged by a plant-wide high voltage electrical supply transient. Replaced damaged variable frequency drives and troubleshoot production line operation.
- ◇ Worked closely with a customer to design and build a control system for a rubber/plastic waste material separation machine.
- ◇ Collaborated with other engineers to design, fabricate, and install motion control and bulk material handling systems. Trained and supervised interns.

**Engineering Co-op Student**, 2004-2005

- ◇ Wrote software application to automate production of industrial electrical drawings.
- ◇ Designed and fabricated electrical control panels and enclosures to NEC, IEC, and UL guidelines.
- ◇ Assisted engineers in customer site visits for installation and visits for quality control.

## TECHNICAL SKILLS

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**Algorithms** Machine learning, computer vision, and image processing.

**Software** Linux, Python, C/C++, GTK+, Subversion, SolidWorks, AutoCAD, Visual Basic, Matlab, Rockwell Software, Microsoft Software, ModelSim, OpenOffice, LaTeX, GIMP, ImageMagick.

**Hardware** DCS design, Embedded systems, Microcontrollers (Microchip, Renesas, TI, Atmel), FPGA's (Xilinx), circuit design, circuit board layout, motor sizing and control.

## PUBLICATIONS

- Young Sang Choi, Cressel D. Anderson, Jonathan D. Glass, and Charles C. Kemp. "Laser Pointers and a Touch Screen: Intuitive Interfaces to an Autonomous Mobile Robot for the Motor Impaired." *In ACM SIGACCESS Conference on Computers and Accessibility* (2008).
- Travis Deyle, Cressel Anderson, Charles C. Kemp, and Matt Reynolds. "A Foveated Passive UHF RFID System for Mobile Manipulation." *In IEEE/RJS International Conference on Intelligent Robots and Systems* (2008).
- Hai Nguyen, Advait Jain, Cressel D. Anderson, and Charles C. Kemp. "A Clickable World: Behavior Selection Through Pointing and Context for Mobile Manipulation." *In 2008 IEEE/RSJ International Conference on Intelligent Robots and Systems* (2008).
- Charles C. Kemp, Cressel D. Anderson, Hai Nguyen, Alexander J. Trevor, and Zhe Xu. "A Point-and-Click Interface for the Real World: Laser Designation of Objects for Mobile Manipulation." *In International Conference on Human-Robot Interaction* (2008).
- Hai Nguyen, Cressel D. Anderson, Alexander J. Trevor, Advait Jain, Zhe Xu, and Charles C. Kemp. "El-E: An Assistive Robot that Fetches objects from Flat Surfaces." *In Robotic Helpers, Int. Conf. on Human-Robot Interaction* (2008).
- Cressel Anderson, Ben Axelrod, J. Philip Case, Jaeil Choi, Martin Engel, Gaurav Gupta, Florian Hecht, John Hutchison, Niyant Krishnamurthi, Jinhan Lee, Hai Dai Nguyen, Richard Roberts, John G. Rogers, Alexander J. B. Trevor, Henrik I. Christensen, and Charles Kemp. "Mobile Manipulation - A Challenge in Integration." *In SPIE Defense and Security Conference* (2008).

## HONORS AND AWARDS

- National Science Foundation** Graduate Research Fellowship, Honorable Mention, 2008
- Outstanding Graduate Teaching Assistant** Electrical and Computer Engineering, Georgia Tech, 2007
- Fife Fellow** Graduate Fellowship, Tau Beta Pi, 2006
- Leadership Award** College of Engineering, UNC - Charlotte, 2006
- IEEE** Co-chair UNC - Charlotte Student Branch 2005-2006. The branch received the 2006 College of Engineering Outstanding Student Organization Award.
- Record Scholar** Scholarship, Tau Beta Pi, 2005
- Scholar** Phi Kappa Phi, 2004
- Leadership Academy** College of Engineering Leadership Academy Graduate, UNC - Charlotte, 2004
- Memberships** Eta Kappa Nu, national electrical and computer engineering honor society; Tau Beta Pi, national engineering honor society; Phi Kappa Phi, national multidisciplinary honor society

## CITIZENSHIP

U.S. Citizen