

Cressel D. Anderson

Healthcare Robotics Laboratory
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(publications available on website)

EDUCATION

M.S., Georgia Institute of Technology
2008, Electrical and Computer Engineering

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

RESEARCH EXPERIENCE

Research Assistant Healthcare Robotics Laboratory (healthcare-robotics.com), May 2007 – present
Supervisor: Prof. Charlie Kemp

Researched technologies in the Healthcare Robotics Laboratory that may contribute to increased quality of life for the disabled and elderly. Projects include contributing to the development of a laser pointer interface for robotics and a robotic system for assistive mobile manipulation in human environments.

Student Georgia Tech, Spring 2007

“4632B/8803 Advanced Intelligent Robotics - Mobile Manipulation”

Supervisor: Prof. Henrik Christensen and Prof. Charlie Kemp

Our team project used a mobile manipulator (Segway RMP 200 base, KUKA KR5 Sixx arm, Schunk PG 70 2-finger parallel gripper, SICK LMS291 laser range finder, and a Unibrain Fire-i camera) to prepare and serve coffee. The task the robot performed required localization and navigation within the test area, recognition of coffee maker and coffee mug, grasping of the coffee mug, and interaction with the coffee maker.

Results:

www.cc.gatech.edu/hic/Georgia-HomePage/Blog/Entries/2007/5/3_Mobile_Manipulation_Exam.html

Engineer Nol-Tec Systems Southeast, 2004 – 2006 Supervisor: Paul Vogt

- ◊ Utilized principles of motion control and bulk material handling
- ◊ Programmed PLC's to automate manufacturing processes
- ◊ Wrote software application to automate production of industrial electrical drawings
- ◊ Designed control panels conforming to NEC, IEC, and UL guidelines
- ◊ Completed piping and instrument diagrams
- ◊ Trained new employees in organizational procedures

TEACHING EXPERIENCE

SURE Mentor for *Carlos Torres*. Georgia Tech, Summer 2008

Teaching Assistant ECE 3041 Instrumentation and Circuits Laboratory, Electrical and Computer Engineering, Georgia Tech, Fall 2006 and Spring 2007

Teaching Assistant Engineering Design in a Global Economy, a 4-wk course conducted for Electrical Engineering undergraduate students from Kyungpook National University in Daegu, South Korea, Electrical and Computer Engineering, UNC - Charlotte, Spring 2004

RESEARCH INTEREST

Autonomous robot manipulation for human environments

Active Sensing

Healthcare robotics

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).

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 3rd ACM/IEEE 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: User Interaction, Interfaces and Companions in Assistive and Therapy Robotics, 3rd ACM/IEEE International Conference 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).

PRESENTATIONS, POSTERS AND DEMONSTRATIONS

Manipulation Workshop RSS 2008 Atlanta GA, July 2007.

Robot demonstration, "A New Platform for Assistive Robotics"

Manipulation Workshop RSS 2008 Atlanta GA, July 2007.

poster, "A New Mobile Manipulation Platform for Automatic Coffee Retrieval"

SoutheastCon 2006 Memphis TN, March 2006.

poster, "Tokka: the Autonomous Turtle"

HONORS AND AWARDS

NSF 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

Record Scholar Scholarship, Tau Beta Pi, 2005

Scholar Phi Kappa Phi, 2004

Leadership Academy College of Engineering Leadership Academy Graduate, UNC - Charlotte, 2004

Eta Kappa Nu member, Electrical and Computer Engineering national honor society

Tau Beta Pi member, national engineering honor society

Phi Kappa Phi member, multidisciplinary national honor society

ACADEMIC SERVICE

SoutheastCon 2006 reviewer

CITIZENSHIP

U.S. Citizen