

Qiushi Fu

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EDUCATION

August 2008 – Present

PhD, Bioengineering at Arizona State University, GPA 3.78/4.0.

Advisor: Dr. Marco Santello

August 2006 – July 2008

M.S., Mechanical and Aerospace Engineering at State University of New York at Buffalo, GPA 3.91/4.0. Advisor: Dr. Venkat Krovi

September 2002 – July 2006

B.S., Department of Automation at Tsinghua University, GPA 3.0/4.0

ACTIVITIES and EXPERIENCES

Publications

Journals

1. **Q Fu**, Z Hasan, M Santello. Transfer of learned manipulation following changes in degrees of freedom. *Journal of Neuroscience* 31(38):13527-13534.
2. **Q Fu**, W Zhang, M Santello. Anticipatory planning and control of grasp positions and forces for dexterous two-digit manipulation. *Journal of Neuroscience* 30(27): 9117-9126.
3. W Zhang, AM Gordon, **Q Fu**, M Santello. Manipulation after object rotation reveals independent sensorimotor memory representations of digit positions and forces. *Journal of Neurophysiology*. 103(6): 2953-2964.

Conferences

1. **Q Fu**, Santello M. Towards a complete description of grasping kinematics: a framework for quantifying human grasping and manipulation. *Proceeding of IEEE EMBC, Boston, MA, USA, Sep 1-4, 2011.*
2. **Q Fu**, Santello M. Tracking whole hand kinematics using extended Kalman filter. *Proceeding of IEEE EMBC, Buenos Aires, Argentina, Sep 1-4, 2010.*
3. H Su, H Dickstein-Fischer, K Harrington, **Q Fu**, W Lu, G Fischer. Cable-driven elastic parallel humanoid head with face tracking for autism spectrum disorder interventions. *Proceeding of IEEE EMBC, Buenos Aires, Argentina, Sep 1-4, 2010.*
4. **Q Fu**, X Zhou, VN Krovi. The Reconfigurable Omnidirectional Articulated Mobile Robot (ROAMeR). *Proceeding of 12th International Symposium on Experimental Robotics, Delhi, India, Dec. 18-21, 2010.*
5. **Q Fu**, VN Krovi. Articulated Wheeled Robots: Exploiting Reconfigurability and Redundancy. *Proceedings of the ASME Dynamic Systems and Control Conference, Ann Arbor, USA, Oct 20-22, 2008.*

Research Experience

1. August 2008 – present

Research assistant, Neural control of movement lab, Kinesiology Department, Arizona State University. Working on neural control of hand movement and application to robotics,

under supervision of Dr. Marco Santello.

2. June 2007 – April 2008
Research assistant, ARM Lab, MAE Department, SUNY at Buffalo. Working on design and control of a hybrid leg-wheel locomotion system, under supervision of Dr. Venkat Krovi.
3. December 2005 – July 2006
Participate in Tsinghua Robocon Team, Working on sensing, and the design, construction and control of mobile robots for ROBOCON Competition.

Teaching Experience

1. September 2008 – May 2009
Teaching assistant, KIN494 Biomechanics Lab, Arizona State University
2. September 2006 – December 2006
Teaching assistant, MAE543 Continuous Control, SUNY at Buffalo
3. January 2007 – May 2007
Teaching assistant, MAE340 System Analysis, SUNY at Buffalo

ROBOTICS PROJECTS

(See <http://www.public.asu.edu/~qiushifu/> for details)

1. **Reconfigurable omnidirectional mobile robot.** Designed and constructed a hybrid leg-wheel locomotion system that can change the arrangement of the wheels according to the task when moving around.
2. **Hexapod.** Designed and constructed a RC servo driven hexapod robot that is capable of different gaits.
3. **Simulated Biped.** Designed robust control algorithm to make a dynamic simulated 2D bipedal robot walk in various conditions including slops and carrying load.
4. **6 DOF Parallel Robot.** Designed and constructed a RC servo driven 6 DOF parallel robot that is controlled though a force feedback joystick.
5. **Robotic hand.** Designing a cable driven anthropomorphic hand based on RC servo.

COMPUTER SKILLS

Languages: C/C++, experienced on virtual reality, simulation and graphic rendering, haptics
Packages: Matlab/Simulink with various toolboxes, LabView, SolidWorks, SolidEdge, VisualNastran, Adams, Maple, SPSS, SAS
Systems: MS-Windows, Linux

MECHATRONICS SKILLS

Robot mechanical design and manufacturing. Control algorithm design and implementation.

LANGUAGE SKILLS

Chinese. English