

Mechatronics Graduates

theses advised by Prof. Wyatt Newman

Mark Beattie, S'89, M.S.

"Nonlinear Modeling and Control of an Industrial Robot"

Michael Vertal, S'89, M.S.

"Development of a Torque Controller for the AdeptOne Robot"

Michael Branicky, F '89, M.S.

"Efficient Configuration-Space Transforms for Real-Time Robotic Reflexes"

Mark Dohring, F'89, M.S.

"Impedance Control of Redundant Manipulators: Theory and Experiments"

Kamal Souccar, S '90, M.S.

"Robust, Near Time-Optimal Control: Theory and Experiments"

Sean Higgins, S '90, M.S.,

"Robot Air Hockey: A First Attempt"

Jay Patel, S '90, M.S.

"Torque Control and Modelling of the AdeptOne Robot"

Werner Ching-min Tseng, F '89, M.S.

"Camera Calibration and Tracking of Moving Objects Through Stereopsis in a Robot Workspace"

Vinay Krishnaswamy, F '90, M.S.

"On-Line Motion Planning in Three-Dimensional Configuration Space for a Robotic Manipulator"

Joseph Cenin, sum '91, M.S.

"An Apportioning Device for Non-Freeflowing Materials"

Ashraf Khan, S '92, M.S.

"Experimental Investigations of the Admittance Function of a Robotic Manipulator"

Steven Somes, S '92, M.S.

"Development of a High-Speed Robotic System for Handling Lightweight Parts"

David Osborn, Sum '92, M.S.

"Evaluation of Robot Kinematic Parameters Based on Laser Line Tracking"

Ronny Shalev, sum '92, M.S.

"Magnified Force-Reflecting Telem Manipulation"

Greg Glosser, F '92, M.S.

"The Implementation of a Natural Admittance Controller on a Robotic Manipulator"

John Martens, S '93, M.S.

"Enhanced Teleoperation of a Mobile Robot"

Kwok Chun Chan, S '93, M.S.

"Graphical and Video-Based Robot Programming"

Adam Johnston, S '93, M.S.

"Magnified Force-Reflecting Telem Manipulation in Three Degrees of Freedom"

Kevin Luu, F '93, M.S.

"Light Engine Lamp Parts Automatic Inspection System"

Brian Mathewson, F '93, M.S.

"Integration of Force Strategies and Natural Admittance Control"

Soheil Sayeh, F'93, M.S.

- “Analysis and Experiments on Calibration of Industrial Robots with Partially Known Kinematic Constraints”*
- Virgilio Velasco**, F '93, M.S.
“Characterization and Control of the Unique Mobility Corporation Robot Prototype”
- Anthony Buop**, S '94, M.S.,
“Robot Air Hockey”
- Nathan Woods**, S '94, M.S.
“Natural Admittance Control of the Salisbury Robot Hand”
- Craig Birkhimer**, S '95, M.S.
“Characterization and Control of the NASA Three Degree of Freedom Reaction Compensation Platform”
- David Sarafian**, sum '95, M.S.
“Performance Characterization of the Case School of Engineering Electric Grand-Prix Race Car”
- Alex Campian**, F '95, M.S.
“The Design and Operation of a DC-DC Flyback Converter for Battery Characterization in Electric Race Vehicles”
- Gregory Accordino**, F '95, M.S.
“Design and Evaluation of a Force-Reflecting Teleoperation System”
- Chrysanthie Chamis**, F '96, M.S.
“An Integrated Simulation and Control Code Generation System for Developing and Implementing Flexible, Bosch Conveyor Material Handling Systems”
- Scott Ameduri**, sum '97, M.S.
“Simulation of Image-Directed Radiation Therapy with Human Interactions”
- Ling Huang**, S '98, M.S.
“Impedance Control for Accommodation of Position Uncertainty in Robotic Assembly”
- Robert Horning**, sum '98, M.S.
“A Comparison of Identification Techniques for Robot Calibration”
- Ivan Risch**, sum '98, M.S.
“Simulation and Control of Rotating Circuitry for Electronic Motor Commutation”
- Ravi Hebbar**, F '98, M.S.
“Geometric Algorithms in Support of Layered Manufacturing”
- Siddharth R. Chhatpar**, F '98, M.S.
“Experiments in Force-Guided Robotics Assembly”
- Kapil Sharma**, Sum '99, M.S.
“Physical Simulation of Image-Directed Radiation Therapy of Lung Targets”
- T. Ganpath Subramaniam**, Sum '99, M.S.
“Development of a Design Analysis Tool for a Novel Brushless Motor”
- Yuesong Wang**, Sum '99
“Workspace Analysis of a Novel Closed-Chain Manipulator”
- Hao Zhang**, F '99
“An Open-Architecture Controller for the AdeptOne Robot”
- Tao Wei**, Sum '00, M.S.
“Design of a Material Handling System for Precise Layered Assembly of Laser-Cut Materials”
- Yonghong Zhao**, Sum '00,

"A Force-Guided Approach for Robotic Peg-in-Hole Assembly"
Ittichote Chuckpaiwong, Sum '00
"Reflexive Collision Avoidance for a Novel Parallel Manipulator"

Dan Morris, Sum '00
"Experiments in Mechanical Assembly Using a Novel Parallel Manipulator"

Cheng Zhang, F '00
"Towards a Practical Robotic Assembly System for Industrial Mechanical Assembly Applications"

Nirut Naksuk, F '00
"The Implementation of a Natural Admittance Controller on an Industrial Robot"

Diego Anzola, S '01
"A Remote Teach Pendant Interface for a Novel Parallel Manipulator"

Gordon Daily, S '01
"An Experimental Investigation of Manipulation Control Based on Facial EMG Signals"

Marco Lung Ngai, S '01
"An Experiment in Internet-Based Human-Assisted Robotics"

Noah Sandler, S '01
"Towards Autonomous Reinforcement Learning for Robotics Assembly"

Jing Wei, sum 2001,
"Intelligent Robotic Learning Using Guided Evolutionary Simulated Annealing"

Ron Lazebnik, S, 2002
"Using Frequency Decomposed Parallel Neural Networks for System Identification"

Yingxi Chen, Sum '03, M. S.
"Design and Evaluation of a Human-Computer Interface Based on Electrooculography"

Jason Rotella, S '04, M.S.
"Predictive Tracking of Quasi Periodic Signals for Active Relative Motion Cancellation in Robotic Assisted Coronary Artery Bypass Graft Surgery"

Adam Covitch, F '05, M.S.
"A Client/Server Approach to Open-Architecture Behavior-Based Robot Programming"

Nathan Diederich, F'05, M.S.
"A Low-Cost, Flexible Platform for Research and Education in Autonomous Robotics"

Thomas Wikman, S '94, Ph.D.

"Reflex Control for Robot System Preservation, Reliability and Autonomy"

Virgilio Velasco, sum '97, Ph.D.

"A Methodology for Computer-Assisted Gripper Customization Using Rapid Prototyping Technology"

Yong Zheng, sum '97, Ph.D.

"Enabling Computational Techniques for Tangential-Building Solid Freeform Fabrication"

Sanguen Choi, Sum '00, Ph.D.

"Design and Evaluation of an Automated Laser-Machining System for Layered Manufacturing"

Mark Dohring, S '02, Ph.D.

"High-Performance Passivity-Based Robotic Force Control"

Ravi Hebbar, S '03, Ph. D.

"Passivity Analysis of Interactive Systems Under Sampled-Data Control"

Craig Birkhimer, F '04, Ph.D.

"Extracting Human Strategies for use in Robotic Assembly"

-----current advisees-----

Ph. D.: Don Anthan, Rick Hudson, Jeremy Marvel

M.S.: Adam Covitch, Yuri Petreiaev, Nathan Diederich, Ryan May, Isaac Hirt,
Robert Hryniewicz, Dmitriy G., Scott McMichael, Emily Warren