Kaushik Subramanian

Contact Information

48C Cedar Lane,
Highland Park, NJ - 08904,
USA

Mobile: +1 650 454 4701
E-mail: kausubbu@eden.rutgers.edu
www: http://www.ece.rutgers.edu/∼kausubbu

Academic Qualifications

Rutgers, The State University of New Jersey — Graduation in May 2010
Master of Science in Electrical and Computer Engineering (ECE) — GPA - 3.57/4

Anna University, India — July 2004 - May 2008
Bachelor of Engineering in ECE — GPA - 72/100

Research Experience

Present - *Project Assistant* at the Real Life Reinforcement Learning Lab (RL^3), Rutgers.

Intern at RWTH Aachen University, Germany — June 2009 - August 2009
Completed a 3 month internship on Humanoid Robot Learning by Demonstration using Gaussian Mixture Models.

Intern at Texas Instruments, India — May 2008 - July 2008
Completed a 3 month internship focusing on Data Compression in Video Encoding Techniques.

Research Trainee at WAran Research FoundaTion, India — June 2006 - May 2008
Completed a 2 year Research Training program with specialization in Signal Processing.

Computing Skills

Programming - C, C++, Java, Python, Matlab
Softwares - ROS, OpenCV, Tekkotsu, Fawkes
Assembly Language - AVR Microcontroller, 8051, 8086, 8085
Operating Systems - Unix and Windows

Ongoing Projects

Masters Thesis - Analysis of the effect of human interactions on Reinforcement Learning algorithms, with focus on methods like Learning by Demonstration and Apprenticeship Learning. *Advisor - Prof. Michael Littman*

Completed Projects

Robot Learning by Demonstration using GMM's (KBSG Lab, RWTH University) — July 2009
A behavior acquisition model was developed for the Nao's using Gaussian Regression. After generalizing the kinesthetic demonstrations, the robot was used to imitate constrained reaching gestures. *Advisor - Prof. Gerhard Lakemeyer*

Best Narration Award - Introduction to Reinforcement Learning (RL^3 Lab) — April 2009
The Lego Mindstorms was programmed to learn real-time in a deterministic environment and to build a model of the world using concepts of Graph Search and Dynamic Programming. A video tutorial was submitted to IJCAI 2009. *Advisor - Prof. Michael Littman*

Autonomous Object Recognition using Corner Detection (Rutgers) — December 2008
Implemented using Corner Descriptors and Geometric Point Matching methods. The advantage of the system was the reduced number of descriptor points as compared to the SIFT algorithm. *Advisor - Prof. Lawrence Rabiner*

Parallel Particle Swarm Optimization (Rutgers) — December 2008
Parallel implementation of the PSO algorithm using MPI. The aim is perform a comparative analysis with the sequential algorithm and to test its application for Multi-Agent Systems. *Advisor - Prof. Manish Parashar*

Mobile Video Reference Data Compression (TI) — July 2008
Developed transform-based techniques using C to compress the reference data acquired from videos captured using mobile phones. This technique was implemented in the H.264 standard. *Advisor - Mr. Ajit Gupte*

Publications

Thomas J. Walsh, Kaushik Subramanian, Michael L. Littman, Carlos Diuk: *Generalizing Apprenticeship Learning across Hypothesis Classes.* To appear in ICML 2010, Haifa, Israel, June 2010.

Kaushik Subramanian: *Task Space Behavior Learning for Humanoid Robots using Gaussian Mixture Regression.* To appear in AAAI 2010, Atlanta, USA, July 2010.

Workshops	*AAMAS 2010 ALIHT Workshop* in Toronto, Canada, May 2010 Presentation on Generalizing Apprenticeship Learning across Hypothesis Classes.
	Dhi Yantra 2008, Workshop on Supercomputing and Brain Modeling conducted by the WARFT, India. Presentation on Higher Order Gabor Statistics for Speech and Image Signal Feature Extraction.
Extra-Curricular Activities	Ardent fan of Origami and Sudoku. Trained in singing and can also play the guitar and keyboard. Active participation in Soccer Events.