Siddharth Narayanaswamy

March 17, 2010

(323) 743-3239 siddharth@iffsid.com http://iffsid.com

Skills

extensive computer-vision, signals and systems, and robotics background, strong experience with algorithms and compiler design, visual perception, machine learning, cognitive science, haptics, automatic-differentiation, stochastic and non-deterministic programming languages, functional, logic, and constraint programming

Languages

C/C++, Scheme, Lisp, MATLAB, VHDL, Verilog, HTML
DSP(AD Blackfin) assembly, microcontroller assembly, x86 assembly
native English, Tamil, and Hindi

Education

PhD student, Artificial Intelligence *2008 – present*
Purdue University, Professor Jeffrey Mark Siskind

cognitive robotics, grounding language in vision and robotic manipulation
high-level reasoning to solve inverse problems in vision and motor control
nondeterministic programming for solving constraint-satisfaction problems
stochastic modeling via probabilistic programming
http://iffsid.com/research

Bachelor of Engineering - Electronics and Communication *2004 – 2008*
Anna University, India

Image Processing, Speech Processing, Computer Vision
Communication Systems, Embedded Systems (Robotics)

Publications / Posters

Learning Physically-Instantiated Game Play Through Visual Observation *May 2010*
Andrei Barbu, Siddharth Narayanaswamy, and Jeffrey Mark Siskind Paper
Proceedings of 2010 IEEE International Conference on Robotics and Automation(ICRA)
http://iffsid.com/icra2010

Design of a Do-It-Yourself VR Based Laparoscopic Simulator *Jan. 2009*
Siddharth.N, Manivannan.M, Suresh Devasahayam, and George Mathew Poster
Medicine Meets Virtual Reality (MMVR17)

Employment History

Research Assistant *Aug. 2008 – present*
Professor Jeffrey Mark Siskind Purdue University, USA

designed and built custom robots for general manipulation tasks
solved vision and robotic manipulation problems using AD-based optimization
implemented closed-loop visual-servoing mechanism to drive motor control
implemented CSP-based algorithms to evaluate physical stability of structures derived from visual input

Undergraduate Research Assistant *May 2007 – Aug. 2008*
Professor Muniyandi Manivannan IIT-Madras, India

implemented a DIY Part-Task Laparoscopic Simulator
optimized vision algorithms to run on low-cost uncalibrated components
tested against industry-standard equipment to demonstrate reasonably low error margins
worked on a haptic-vision developmental interface
collaborated with practicing doctors to test feasibility

Part-Time Instructor *Oct. 2007 – Aug. 2008*
The Princeton Review(Manya Education Pvt.Ltd.) Chennai, India

- instructor for the GRE and GMAT standardized exams
- oversaw roughly 150 students during the course of employment

Undergraduate Research Intern *May 2007 – Sept. 2007*
Doors and Gates Pvt.Ltd. Chennai, India

- implemented a range of IR control mechanisms for controller operations
- tested and used implemented mechanisms successfully in robots during competitions
- designed hybrid control mechanism for non-line-of-sight applications that included switching between multiple modes of operation autonomously