Siddharth Narayanaswamy

June 16, 2012

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

Skills

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

Languages

Scheme, Haskell, Lisp, C/C++, MATLAB, Python, Prolog, Java, VHDL,
Verilog, DSP(AD Blackfin) assembly, microcontroller assembly, x86 assembly

native English, Tamil, and Hindi

Experience

PhD student, Artificial Intelligence
2008 − present

Jeffrey Mark Siskind   Purdue University

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
developed and implemented stochastic programs to use language & vision,
 and reasoning about rules jointly, to solve for perception
developed novel and robust tracking, segmentation, and action recognition
 methods as part of the DARPA Mind's Eye program
nondeterministic programming for solving constraint-satisfaction problems
stochastic modeling via probabilistic programming
TA for ECE473 & ECE570, Artificial Intelligence
`http://iffsid.com/research.html`

Undergraduate Research Project
May 2007 − Aug. 2008

Guided by Professor Muniyandi Manivannan   IIT-Madras

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

for the GRE and GMAT standardized exams
tutored around 250 students

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

Education

Phd Student, Artificial Intelligence

Artificial Intelligence, Computer Vision, Natural Language Processing
Machine Learning, Robotics

Bachelor of Engineering - Electronics and Communication

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

Publications / Posters

Video In Sentences Out

Aug 2012
Paper

A. Barbu, A. Bridge, Z. Burchill, D. Coroian and S. Dickinson , S. Fidler, A. Michaux, S. Mussman and N. Siddharth , D. Salvi, L. Schmidt, J. Shangguan and J. M. Siskind, J. Waggoner, S. Wang, J. Wei and Y. Yin and Z. Zhang
Proceedings of the Twenty-Eighth Conf. on Uncertainity in Artificial Intelligence(UAI)

A Visual Language Model for Estimating Object Pose and Structure in a Generative Visual Domain

May 2011
Paper

N Siddharth, A. Barbu, and J. M. Siskind
Proceedings of 2011 IEEE International Conf. on Robotics and Automation(ICRA)

Learning Physically-Instantiated Game Play Through Visual Observation

May 2010
Paper

A. Barbu, N Siddharth, and J. M. Siskind
Proceedings of 2010 IEEE International Conf. on Robotics and Automation(ICRA)

Design of a Do-It-Yourself VR Based Laparoscopic Simulator

Jan. 2009
Poster

N.Siddharth, M.Manivannan, Suresh Devasahayam, and George Mathew
Medicine Meets Virtual Reality (MMVR17)