Pragun Goyal

22 Magazine St # 1
Cambridge, MA 02139
pragun.goyal@gmail.com
http://pragungoyal.com

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Objective

To find interesting technology design problems and to build beautifully engineered solutions for them.

Education

Master of Science in Media Arts and Sciences, September 2014
Massachusetts Institute of Technology
Advisor: Prof. Joe Paradiso, Responsive Environments Group

Bachelor of Technology in Computer Science & Engineering, 2010
Indian Institute of Technology (IIT) Delhi

Experience

Systems Engineer | October 2014 - Ongoing | Cambridge, MA
Portal Instruments, Inc.
Designed and developed a prototype for a control system to control a Brushless DC motor based needle-free injection system
Designed and developed a system to collect and analyze data generated across multiple measurement instruments in lab experiments
electromechanical design and prototyping, electromechanical test setup design and development, software design and development, embedded systems, FPGA design; LabView, Python

Electronics and Programming Coach | November 2014 - Ongoing | Cambridge, MA
Buckingham Browne and Nichols (BBN) Middle School
Teach a weekly project-based class introducing middle schoolers to the basics of electronics and micro-controller programming
curriculum development, teaching

Research Assistant | September 2012 - August 2014 | Cambridge, MA
Responsive Environments, MIT Media lab
Developed two smart hand tools that enable the use of CAD in hand fabrication
concept and object design, digital modeling and fabrication, mechanical design, electronic design, signal processing, estimation, software development, embedded systems, video documentation

Co-founder, Developer | November 2011 – August 2012 | New Delhi, India and Cambridge, MA
Inplore, Inc.
Developed the core backend for a decentralized search engine for personal data
software architecture and development, business plan development

Biodesign Intern, Co-founder: Sohum | April 2011 – March 2012 | New Delhi, India
Stanford India Biodesign, All India Institute of Medical Sciences (AIIMS)
Designed the analog front end, signal acquisition and electronics for an Auditory Brainstem Response based newborn hearing impairment screening device.
electronic design, embedded systems

Research Associate | January 2011 - March 2011 | New Delhi, India
Advanced Computer Networks Lab, Computer Science and Engineering, IIT Delhi
Designed, prototyped and validated an inertial pedestrian dead-reckoning system
signal processing, estimation

Research Assistant | July 2009 - December 2009 | Pittsburgh, PA
Field Robotics Center, Robotics Institute, Carnegie Mellon University
Developed controls and positioning system software for indoor and outdoor robots
embedded systems, signal processing, estimation

Intern | May 2009 – July 2009, May 2010 – July 2010 | Bangalore, India
Beceem Communications, Inc.
Developed Linux kernel support for automated testing of WiMax base stations
software development, Linux kernel hacking

Publications

Pragun Goyal, Joseph A. Paradiso and Pattie Maes, "Nishanchi: CAD for hand-fabrication," *Proceedings of the 27th annual ACM symposium on User interface software and technology (UIST `14) Demonstrations,* October 2014.

Zoran Amit, Roy Shilkrot, Pragun Goyal, Pattie Maes and Joseph A. Paradiso, "The Wise Chisel: The Rise of the Smart Handheld Tool," *IEEE Pervasive Computing, vol. 13, no. 3, pp. 48-57*, July-September, 2014.

Pragun Goyal, Harshit Agrawal, Joseph A. Paradiso and Pattie Maes, "BoardLab: PCB as an interface to EDA software," *Proceedings of the 26th annual ACM symposium on User interface software and technology (UIST `13) Demonstrations,* October 2013.

Pragun Goyal, Vinay Ribeiro, Huzur Saran and Anshul Kumar, "Strap-Down Pedestrian Dead-Reckoning System," *Proceedings of the International Conference on Indoor Positioning and Indoor Navigation (IPIN) 2011,* September 2011.

Pragun Goyal, Apoorva Garg, Shantanu Kedia, Varun Garg, Anshul Mittal and M. Balakrishnan, "DISHA: An Indoor Navigation System for the Visually Challenged," *Proceedings of the International Society for Augmentative and Alternative Communication (INAE-ISAAC),* March 2009

Teaching Experience

Design Innovation Workshop | March 2012 | New Delhi, India
Mentor, Design for Sustainability,

Design Innovation Workshop | January 2013 | Bangalore, India
Mentor, Sensor Environments,

Design Innovation Workshop | January 2014 | Mumbai, India
Mentor, Fabrication Laboratory

Media Lab Abu Dhabi Workshop | February 2014 | Abu Dhabi, UAE
Mentor , Sensors and Networks

NuVu Professional Development Workshop | June 2014 | Cambridge, MA
Mentor , Electronics and Prototyping

Languages

English (fluent), Hindi (fluent), Iraqi-Arabic (mildly conversational)

Interests

Pottery, wood-working, windsurfing, guitar