

# Subramaniam Venkatraman

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## Education

### University of California, Berkeley

Ph.D. Electrical Engineering and Computer Science (expected 2009)

### University of California, Berkeley

M.S. Electrical Engineering and Computer Science (2006)

### Indian Institute of Technology Bombay

B.Tech. Electrical Engineering (GPA 9.49/10.00) (2004)

## Honors and Awards

- James Eaton Memorial Scholarship at UC Berkeley, 2007
- University of California, Berkeley Fellowship, 2004
- J.N. Tata Endowment Scholarship, 2004
- Institute Silver Medal at for highest GPA in EE department, IIT Bombay, 2004
- Urvish Medh Award and the Institute Award at IIT Bombay, 2003
- Ranked 13th in the merit list at the H.S.C. Examination (Bombay University)

## Research Experience

### Intracortical Microstimulation for Sensory Neuroprostheses

Advisor: Prof. Jose Carmena, Univ. of California, Berkeley (2006 – present)

- Investigating the use of microstimulation through chronically implanted electrodes as a method to provide sensory feedback to the disabled.
- Constructed a closed loop stimulation and recording system to trigger microstimulation based on neural or behavioral events and record the neural responses to microstimulation.
- Currently using this system to explore behavioral modulation of neural responses to microstimulation.

### Monitoring Behavior of Animals using Wireless Sensors

Advisor: Prof. Kris Pister, Univ. of California, Berkeley (2006)

- Designed and built a wireless accelerometer 10g in weight and 1inch in size.
- Monitored behavior of rats using an accelerometer strapped to the animal.
- Developed a simple neural network based algorithm to classify different behaviors like standing, eating and grooming.

### Serial Assembly of Microstructures (Masters Project)

Advisor: Prof. Kris Pister, Univ. of California, Berkeley (2004 – 2005)

- Designed, fabricated and tested assembled microstructures like two axis micromirrors and vertical bent beam thermal actuators for out-of-plane motion.
- Compliant microgrippers used during assembly, in-plane electrostatic actuators, snaplock connectors and rotation mechanisms were all fabricated in the same process.

### **High Speed Confocal Microscopy**

Advisor: Prof. Sudipta Maiti, TIFR, Bombay (2003-2004)

- Designed a confocal microscope with a higher sensitivity than existing models due to a novel alignment of the optics involved to minimize the optical path length and the use of an APD as the detector.

### **Low Power, Asynchronous bus based on CDMA**

Advisor: Prof. Edoardo Charbon, EPFL, Switzerland (May – August 2003)

- Designed the transmitter and receiver for a CDMA based bus system and simulated the same on Hspice.

### **Refereed Conference Proceedings**

- M. Last, V.Subramaniam, K.S.J.Pister, "Out of Plane Motion of Assembled Microstructures using a Single mask SOI Process", in *International Conference on Solid State Sensors and Actuators (Transducers 2005)* Seoul, South Korea
- M. Last, V.Subramaniam, K.S.J.Pister, "A Microassembled Large-deflection Tip/Tilt Micromirror from a Single-mask DRIE Process", in *Hilton Head 2006 workshop*, Hilton Head Island, S.C
- V.Subramaniam, M.E.Last, K.S.J.Pister, "Methods And Characterization Of Pick And Place Microassembly", in *ASME International Congress 2006*, Chicago.
- Subramaniam Venkatraman, John D. Long, Kristofer S.J. Pister, Jose M. Carmena, "Wireless Inertial Sensors for Monitoring Animal Behavior", in *IEEE Engineering in Medicine and Biology Conference 2007*, Lyon, France.

### **Presentations**

- Subramaniam Venkatraman, John D. Long, Jose M. Carmena, "Electrochemical Constraints for Intracortical Microstimulation used in Neuroprosthetic Applications", Society for Neuroscience Meeting, San Diego, November 2007 (poster)
- Subramaniam Venkatraman, John D. Long, Jose M. Carmena, "Simultaneous stimulation and recording using cortical microelectrodes", Bio-Medical Engineering Society Fall Meeting, Los Angeles September 2007
- Subramaniam Venkatraman, Kristofer S.J. Pister, "Wireless Inertial Sensors for Animal Motion Monitoring," Berkeley Sensor and Actuator Center Industrial Advisory Board Meeting, Berkeley, CA, March 2007.

### **Work Experience**

#### **Zyvex**

MEMS Research Intern

Designed and tested MEMS grippers to aid in automated microassembly of MEMS structures.

**Dallas, Texas**

June – August 2005

#### **University of California, Berkeley**

Graduate Student Instructor

EE140 – Introduction to Analog Circuits

Spring 2006

### **References**

Available upon request