



COLUMBIA UNIVERSITY



NSF Workshop on Hybrid Neuro-Computer Vision Systems

**April 19-20, 2010
New York City**

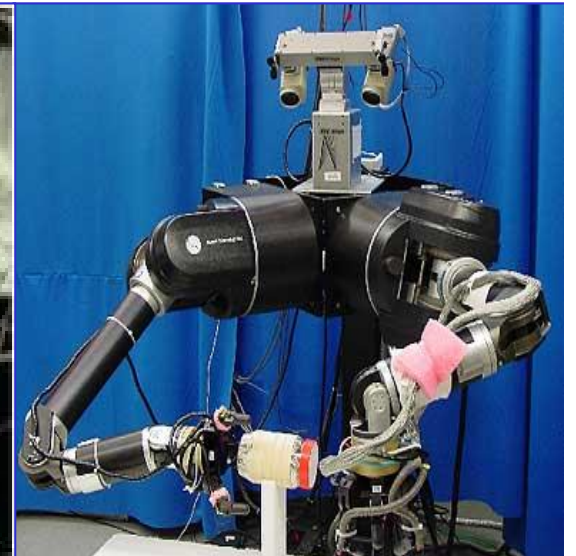
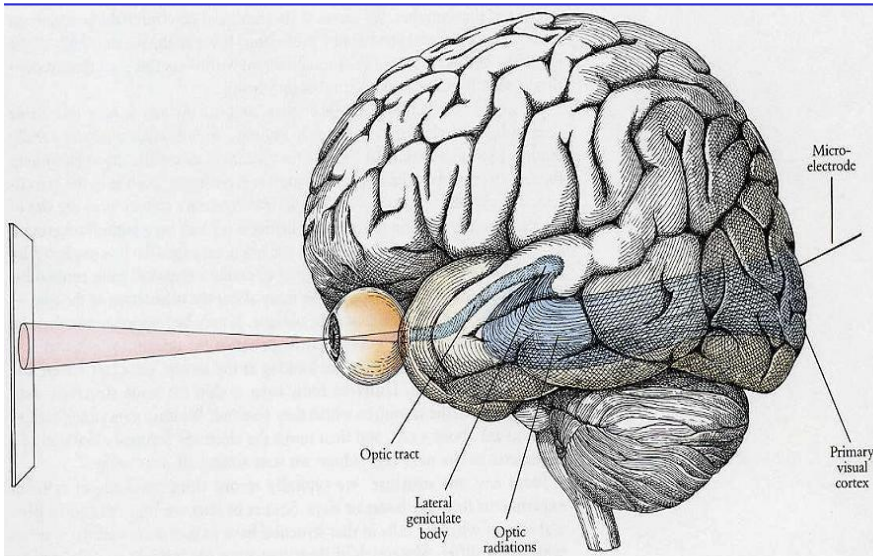
Organizers: Shih-Fu Chang and Paul Sajda





Workshop Objectives

- Facilitate interaction among experts from *neuroscience, computer vision, and brain machine interface*
- Explore new applications and requirements
- Hybrid vision system designs that exploit synergistic combinations of neural and computer vision
- Recommend future directions and programs





Speakers and Sponsors

Neuroscience and Neural Computing

- Garrett Stanley, Biomedical Engineering, Georgia Tech.
- Chris Rozell, Electrical Computer Engineering, Georgia Tech
- Charles Cadieu, Neural Science, UC Berkeley
- Paul Sajda, Biomedical Engineering, Columbia U.
- Jack Gallant, Psychology, UC Berkeley
- Frank Tong, Psychology, Vanderbilt U.
- Philippe Schyns, Psychology, U. of Glasgow

Neural-Inspired Computer Vision

- Thomas Serre, Cognitive and Linguistic Science, Brown U.
- Yann LeCun, Computer Science and Neural Science, NYU
- Aude Oliva, Brain and Cognitive Science, MIT
- Li Fei-Fei, Computer Science, Stanford U.
- Antonio Torralba, Computer Science, MIT
- Laurent Itti, Computer Science, Psychology and Neuroscience, USC

Hybrid Vision Systems and Applications

- Amy Kruse, Neural Science, Total Immersion Software
- Qiang Ji, Electrical Computer Engineering, RPI; Computer Vision, NSF
- Shih-Fu Chang, Electrical Engineering, Columbia U.

Government Representatives

- Qiang Ji, NSF (Workshop Sponsor)
- Liyi Dai, Army
- Tom Nugent III , DARPA
- Dan Purdy , DARPA
- Grace Rigdon , DARPA
- Wendell G Sykes , DARPA

Industry Participants:

- Sarnoff
- Google
- IBM
- AT&T
- Neuromatters
- Total Immersion Software
- Others



Program and Logistics

- April 19th: Invited Presentations (each talk 20mins + QA)
Talks: Interschool Lab (CEPSR 750)
Coffee/Lunch: CEPSR 414
- April 20th :
9-12: Breakout Group Discussion
1-3 : Plenary Session: Group Report and Discussion
(everyone is invited)
- Contact:
Jessica Rodriguez, jr3056@columbia.edu, 212-854-5019



Workshop Output

- Slides and Video Recording
available online <http://www.columbia.edu/cu/hybridvision/>
- Workshop Report
 - State of the Art and Recent Advances
 - Neural Vision
 - Computer Vision
 - Brain Machine Interfaces
 - Hybrid Vision Systems
 - Identify application domains and requirements
 - Identify grand challenges and research opportunities
 - Recommend actions for NSF and other funding agencies
 - Recommend collaborative initiatives, e.g., community resources, benchmarking, conferences, etc.