Sricharan Sunder

Vision Lab, Indian Institute of Science, Bangalore, Karnataka - 560012

✆ +91 9547891742 • ✉ sricharan92@gmail.com

Education

Indian Institute of Technology   **Kharagpur**
B.Tech & M.Tech (Hons) Metallurgical and Materials Engineering   *July 2009 – June 2014*

I hold a dual degree in Metallurgical and Materials Engineering from the Indian Institute of Technology, Kharagpur with a CGPA of 7.85/10

Research

Publications

Sunder S & Arun SP (2015) *'Look before you seek: Preview adds a fixed salience to all searches'* (Under Review)   *August 2014 - October 2015*

- Conducted a battery of psychophysics experiments to understand the mechanisms underlying the benefit of preview in visual search reaction times
- The study revealed a constant benefit in the target salience irrespective of search difficulty

Conferences

IIT Gandhinagar CBC2015: *'Target priming confers a fixed benefit irrespective of search difficulty'* (Abstract Accepted)   *December 2015*

Projects

Transcranial Magnetic Stimulation (TMS) Study: *'Testing the causal role of the Lateral Occipital Complex (LOC) in mirror confusion'*   *October 2015 - Present*

- Designed and collected data for 2 psychophysics experiments to see if TMS pulses to the LOC (localized through fMRI) affect the phenomenon of mirror confusion in visual search
- Currently conducting analyses of the collected data

Electrophysiology study: *'Neural correlates of relational coding in the macaque inferotemporal (IT) cortex'*   *September 2015 - Present*

- Sorted single units from pre-collected neuronal extracellular recording data for a study designed to investigate if IT neurons code for relative distance, position or orientation of objects
- Currently conducting the analysis of sorted data

Internship Project at Mad Street Den: *'Robust face and eye tracking in low resolution video streams'*   *May 2013 - July 2013*

- Implemented a combination of Viola-Jones face detectors and a motion compensation heuristic across frames to drastically reduce the number of false positives in face detection
- Was able to attain very robust tracking of faces and eyes in video streams of resolutions as low as 300x300 pixels

- **Master's Project (IIT Kharagpur):** *'A computationally efficient model to select the operating parameters during electron beam welding for a given geometry of steel weld using Neural Networks and Genetic algorithms'* June 2013 - May 2014
    - Coupled a genetic algorithm model with a neural network forward model for getting the optimum beam parameters to attain a specific weld geometry.
    - Developed a neural network model to predict the weld geometry of an electron beam weld up to an error of 2.5%. This got the prediction time down from 5 mins to less than a second.

Work Experience

- **Indian Institute of Science** **Bangalore**
  Research Assistant, Vision Lab, Center for Neuroscience *July 2014 – Present*

    - **Psychophysics:**
        - Designed and implemented over 10 psychophysics experiments
        - Collected data across more than 50 sessions
        - Analyzed the data and documented the results

    - **Transcranial Magnetic Stimulation:**
        - Standardized the TMS setup in IISc by replicating a published result (Koivisto et al, 2011)
        - Collected data from over 20 sessions

    - **Electrophysiology:**
        - Sorted raw extracellular data into single unit activity and multi-unit activity

Research Interests

Vision, Memory, Decision making and Sensory Systems

Skill Set

- **Programming:** MATLAB, Python

- **Softwares:** OpenCV, Plexon Offline Sorter, PsychToolbox, SPM8

- **Techniques:** Psychophysics, TMS, fMRI

Achievements

- **Co-curricular**
    - Awarded the National Talent Search Examination (NTSE) scholarship in 2007. A total of 1000 awardees all over India

- **Extra Curricular**
    - Participated and won prizes in a music event in the cultural fest (Spring Fest) of IIT Kharagpur in 2013 and 2014.
    - Governor of the Eastern Music Club of IIT Kharagpur (ETMS) for the session 2013 - 2014
    - Participated and won prizes in several music competitions at the intra-college level in IIT Kharagpur
    - Was the Head of Design for Spring Fest - 2012 (annual cultural festival of IIT Kharagpur)