Sai Srivatsa Ravindranath
4^{th} **Year Undergraduate**
Indian Institute of Technology, Kharagpur

CONTACT INFORMATION

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EDUCATION

Indian Institute of Technology, Kharagpur **July, 2012 - Present**
B.Tech (Hons) in Electrical Engineering
Minor in Computer Science and Engineering
- GPA (until the 6^{th} semester): 8.96/10.00

SBOA School and Junior College, Chennai **July, 2010 - Apr, 2012**
Higher Secondary School Examinations, Class XII, CBSE board
- Aggregate: 95.6%
- Computer Science: 99%

PUBLICATIONS

Sai Srivatsa R, Michael Gygli, Luc Van Gool. "Learning Objective functions for Improved Image retrieval". MediaEval 2015 Workshops

Sai Srivatsa R, R Venkatesh Babu. "Salient Object Detection via Objectness Measure". IEEE International Conference on Image Processing (ICIP), 2015

INTERNSHIPS

Learning Submodular Objectives for Improved Image Retrieval
Computer Vision Lab, ETH Zurich **May, 2015 - July, 2015**
- Formulated Image retrieval as subset selection problem and addressed it using submodularity.
- Implemented submodular shells that quantify how relevant or representative a given subset is. Used large-margin formulation, optimized using stochastic gradient descent to learn weights for a mixture of implemented shells.
- Best results on MediaEval 2013 Diversifying Image Retrieval datatset

Visual Interestingness of Images
Computer Vision Lab, ETH Zurich **May, 2015 - July, 2015**
- Analyzed how image content and emotions are linked to interest.
- Built a predictive model using deep convolutional networks, which predicts interest more accurately than the previous state-of-the-art.

Salient Object Detection via Objectness Measure
Video Analytics Lab, IISc Bangalore **May, 2014 - July, 2014**
- Proposed a method to estimate the foreground regions in an image using objectness proposals.
- Proposed a novel saliency measure which determines how tightly a pixel or a region is connected to the estimated foreground which is then used to obtain smooth and accurate Saliency Maps.
- Implemented and evaluated the proposed approach on two benchmark databases. Results obtained were better than the existing state of the art approaches.

Comparative Analysis of Signal Processing Algorithms for Bearing Fault Diagnosis
Real Time Systems Divsion,IGCAR, Kalpakkam **Winter 2013**
- Analyzed how effective different Signal Processing algorithms are, in detecting bearing faults despite the signals being noisy.
- Implemented algorithms such as envelope detection, Empirical Mode Decompositions,FFT and techniques using morphological operators and evaluated their performance.

Other Projects

Visual Attention Models
Ongoing Bachelors Thesis Project
- Working on Attention based models for Image classification tasks

Selective Search for Object Recognition
- Implemented Selective Search, a state-of-the-art object proposal algorithm in Python.
- Integrated the above with fast-RCNN (Regions with Convolutional Neural Network Features) model to perform Object Recognition.

Regression based Automated Essay Scoring
- A regression based approach for automatically scoring essays written in English.
- Used standard NLP techniques for obtaining the features from the text and integrated it with an improved vector-space model
- The results obtained are comparable to professional human raters while at a much faster rate.

Grammatical Error Correction
- A Grammatical Error Corrector based on Round Trip Machine Translations using python and openFST package

Intelligent Game Agents
- Developed a Minimax and alpha-beta search based intelligent agent for Warfare game.
- Designed GUI using Qt

Image Segmentation
- Using Prims algorithm, a minimum spanning tree was constructed. Costliest edges were removed to obtain disjoint regions/segments

Scholarships

- **Inspire Fellowship for Higher Education** 2012 - 2013
  Program by Govt. of India
- **KVPY Fellowship** 2011 - 2012
  Among Top 200, National
- **National Talent Search Scholarship (NTSE)** 2009 - 2011
  Among Top 1000, National

Scholastic Achievements

- **99 percentile in IIT-JEE** 2012
  Among 0.5 million candidates, National
- **99.93 percentile in AIEEE** 2012
  Among 1.1 million candidates
- **All India Rank 7 in National Cyber Olympiad** 2012
  National
- **Certificate of Merit, Indian National Mathematics Olympiad (INMO)** 2012
  Top 75, National
- **Certificate of Merit, National Standard Examinations in Chemistry (NSEC)** 2012
  Top 300, National
- **Certificate of Merit, National Standard Examinations in Physics (NSEP)** 2012
  Top 1%, Regional

Skills

Python, C, C++, Matlab,
LaTeX, Qt, Git, SVN, Linux, Windows