Yashas Annadani

CONTACT INFORMATION

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RESEARCH INTERESTS

Computer Vision, Machine Learning, Artificial Intelligence

EDUCATION

National Institute Of Technology – Karnataka, INDIA — August 2013 – June 2017
Bachelor of Technology (3rd Year)
Major: Electrical and Electronics
CGPA: 9.16/10.0 (Upto 6th Semester)
5th in the department out of total 105 students

Shri Bhagawan Mahaveer Jain College, Bangalore, INDIA — June 2011 – March 2013
Pre-university
Core Subjects: Physics, Chemistry, Mathematics, Biology
CPI/Percentage: 95.25% (Core Subjects)

PUBLICATIONS

Annadani Yashas, Naganoor Vijayakrishna, Jagadish Akshay Kumar and Chemmangat Krishnan, **Selfie Detection by Synergy-Constraint based Convolutional Neural Network**. Accepted for publication at *IEEE International Conference on Signal Imaging Technology and Information Systems (SITIS)*, 2016.

RESEARCH EXPERIENCE

Summer Research Intern — *Guide: Francois Bremond*
INRIA, France — May 2016 – July 2016
Deep Siamese CNN for large scale action recognition from RGBD data

• Used Depth data to enhance recognition performance.
• Approach involved Siamese networks, in which one channel was for RGB and the other channel for Depth. Motion embeddings were obtained from Depth data by feeding Depth Channel fully-connected layer's activations to an LSTM network.
• A novel transformation scheme to combine both the static appearence feautures from RGB and motion features from Depth was proposed. The entire approach was tested on the large private dataset of approximately 29 TB in disk space. In addition, it was also tested on NTU-RGBD Dataset, which is a public dataset consisting of 60 actions and total of 56k videos. This approach yielded good results and is under further experimentation and will be sent to publication in the near future.

Summer Research Fellow — *Guide: Dr. Soma Biswas*
Department of Electrical Engineering, Indian Institute of Science — May 2015 – July 2015
Human Action Recognition using 3D Skeletal Joints

• Although existing methods used different complex descriptors, their applicability to wide range of temporal scales, range and rate variations was limited. To overcome this, we proposed a sliding window based dictionary learning paradigm wherein each sliding window had different sparsities while maintaining temporal evolution. This helped to address the applicability to wide range of temporal scales.
•This technique was further augmented with a simple and complementary feature which calibrates

each action to a baseline and then rate variation is accounted for in the difference of these featrures.
• Experiments conduncted on 4 standard publicly available datasets yielded state-of-the-art results.

Professional Experience

Embedded Systems, Vector Institute Bangalore, India May 2014 – June 2014
• Implemented a GSM based home automation using 8051 microcontroller.
• Interfaced GSM module to microcontroller using I2C protocol and also tested using other microcontrollers.
• The project was preceded by a comprehensive learning of microcontroller architecture, assembly language, C and other concepts deemed necessary to deploy microcontrollers.

Skills and Coursework

• **Regular Coursework**
Linear Algebra, Probability Theory, Pattern Recognition and Machine Learning, Signals and Systems, Digital Signal Processing, Single and Multi variable calculus, Linear Digital Control Theory.

• **Independent Coursework**
Image and Video Processing (by Guillermo Sapiro, Duke University) Coursera: Successfully completed course with **distinction**
Machine Learning (by Andrew NG,Stanford University) Coursera

• **Computational Skills:** Java, C, Python and Bash

• **Technical Skills:** Matlab, TINA, Octave, OpenCV, Caffe, Torch and LaTeX

Academic Research Projects

Digital Electronics Course Project Aug 2015 – Sept 2015
Designing a SRF-PLL using FPGA
Detecting voltage imbalance of an inverter output by implementing a Synchronous Reference Frame Phase-Locked Loop (SRF-PLL) using a digital circuit. Developed VHDL blocks to achieve the task. The code was executed on Altera FPGA hardware.

Smartslate Project Dec 2014 – Feb 2015
Forming three-dimensional projections of a contour or any object which aids the blind
Built a refreshable tactile interface for the blind, that enables them to touch and grasp concepts. Implemented 8x8 matrix of actuators controlled by Raspberry pi and driven by 12V DC motor. Project was selected for display at project expo at **Rastrapati Bhavan, New Delhi.**

Facial Gender Recognition using Neural Networks March 2015 – May 2015
Biologically inspired gender recognition from facial images
Aim was to make the recognition task invariant to changes in age and external appearence. Various anatomical features which were found distinct to each gender (male and female) were extracted using Image processing techniques and classified using Neural Nets.

Academic Honors

• Offered Mitacs Globalink Scholarship for Summer Research Internship in Canada (Declined).
• Secured Rank **126** in Karnataka Common Entrance Test (2013) among 150,000 entrants.
• Ranked in *top 1%* (All India) in JEE Main Entrance Exam (2013) for admission to NITs ,with a state rank of 255.
• Secured Rank **47** in COMED-K Entrance Exam (2013) from approximately 50,000 entrants.
• Secured distinction in Class 12 (*95.25 %*) board examination. Secured distinction in Class 10 ICSE (*94.6%*) board examinations and was the batch topper.

Extra - Curricular

• Member of the executive committee of IEEE NITK, which holds a good mix of workshops, talks, projects and competitions on various engineering and technological aspects.
• Delivered a workshop on Image Processing as part of IEEE at NITK (Jan 2015).
• Secured 3rd place in the competition *Velocity*, *ENGINEER 2013*, an RC car building and racing competition held at NITK which witnessed participants from all over the country (Oct 2013).
• Secured 4th place in the competition *Fuel RC2,TECH TATVA 13*, technical fest of Manipal Institute of technology among more than 20 teams from all over the country (Oct 2013).
• Love to play basketball regularly, avid reader of novels, music lover and travel enthusiast.

Referees

Dr. Soma Biswas
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Indian Institute of Science
Bangalore, India
E-mail-*available on request*

Dr. Krishnan CMC
Department of Electrical and Electronics
NITK Surathkal
Mangalore, India
E-mail-*available on request*

Francois Bremond
Research Director and Head, Stars Team
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Nice, France
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