

Manogna Sreenivas

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EDUCATION

Indian Institute of Science

PhD in Electrical Engineering, CGPA: 9.0/10.0

Bengaluru, India

Oct 2020-Present

National Institute of Technology Karnataka

B.Tech in Electrical and Electronics Engineering, CGPA: 8.72/10.0

Surathkal, India

Aug 2013- Apr 2017

R.V. P.U. College

Karnataka Pre University Board Examination, Score: 94.3%

Bengaluru, India

June 2011- Apr 2013

WORK EXPERIENCE

PathPartner Technology

Software Engineer

Bengaluru, India

July 2017 – August 2020

- Face Detector for Driver Monitoring System: Developed a customized Single-Shot Detection based Face Detector for an in-house product, ported and integrated to an in-house developed SDK with support for hardware platforms from Intel, ARM, Qualcomm, Cadence etc.
- Porting Deep Learning models to edge devices: Used toolkits like SNPE, OpenVINO, ArmNN to port models trained in TensorFlow/PyTorch to binaries optimized for respective hardware. Performed benchmark analysis of ML models for speed, energy consumption, etc. across hardware platforms.
- Defective Food Package Classification: Developed a CNN based model to identify images with defective vacuum packages, to deploy in an industrial production line.
- DSP Optimization: Developed SIMD vectorized convolution algorithms using intrinsics to enable TensorFlow APIs for Cadence Tensilica Vision DSPs.

Wipro Technologies

Intern

Bengaluru, India

April 2017 – June 2017

- Worked on “Pedestrian Detection” module as a part of “Wipro Autonomous Vehicle” team. HOG feature extractor along with SVM as predictor was developed using Python libraries.

CERTIFICATIONS

- [Machine Learning](#) by Stanford University on Coursera, Jan 2016.
- [Deep Learning Specialization](#) by deeplearning.ai on Coursera, Feb 2020.
- Reinforcement Learning by CCE, IISc, May 2020.

COURSEWORK

- Digital Image Processing, Advanced Image Processing, Pattern Recognition and Neural Networks, Advanced Deep Learning, Matrix Theory, Stochastic Models and Applications, Computational Methods for Optimization.
- Teaching Assistant for Digital Image Processing course offered at IISc during Fall 2021.

TECHNICAL SKILLS

Programming Languages: C, Python

Libraries: OpenCV, PyTorch, TensorFlow

PROJECTS

Unsupervised Domain Adaptation for Facial Expression Recognition

IACV Lab, IISc, in collaboration with AISIN Corporation, Japan

July 2021 – April 2022

Bengaluru, India

- The objective is to utilize labelled source domain data along with unlabelled target domain data effectively recognize facial expressions in the target domain. Proposed Data Imbalance and Feature Confusion(DIFC) module to mitigate the effect of class imbalance due to labeled source domain samples, while also reducing confusion among classes in target domain.

Cross Domain Few-Shot Learning

IACV Lab, IISc

January 2022 – Present

Bengaluru, India

- The problem of Cross-domain Few-shot image classification is to recognize new classes given limited labelled training data, which also come from an unseen domain. We propose a simple label preserving feature augmentation module that can aid learning with less samples. This along with effectively calibrating cosine similarity scaling factor significantly improve the performance over current baselines.

Discrete Wavelet Transform Based Image Steganography

National Institute of Technology Karnataka

Aug 2016 – Apr 2017

Surathkal, India

- Implemented an algorithm to embed data by modifying high frequency details in images. The idea being human eyes are less sensitive to observe changes in high frequency detail.

Virtual Live music

National Institute of Technology Karnataka

Jan 2016 – Apr 2016

Surathkal, India

- Developed a prototype that can produce live music to one's dance beats. KINECT was used to do skeletal tracking. The keypoints obtained were used as MIDI signals to synthesize music.

ACHIEVEMENTS

- Member of the winning team, Bosch Ideation Contest conducted as a part of Bosch Day, 2016 at NITK.
- Secured a state rank of 254 in Joint Entrance Exam(JEE) Mains, 2013
- Secured a rank of 172 in Karnataka Common Entrance Test(K-CET), 2013
- Secured a grade of 10/10 in Class 10, appreciated with a Certificate of Merit from CBSE Board.
- National Science Olympiad Scholar in Class 8.