

PRUDVI RAJ BAIKANI

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EDUCATION

Indian Institute of Technology, Delhi

July 2012 - May 2016

Bachelor of technology in Electrical Engineering

Cumulative Grade Point Average: 6.89/10.00

RESEARCH EXPERIENCE

Hybrid Neural Network for automatic handwritten digit recognition

Aug 2015 - Nov 2015

Bachelor's Thesis, Guide: Prof.Brijesh Lall, EE, IIT Delhi

- Implemented an ensemble network by feeding features from a fully connected layer in CNN to SVM classifier.
- Achieved better classification results on the MNIST data set than the existing CNN and SVM classifiers.

WORK EXPERIENCE

Samsung Research and Development Institute, Delhi

(Engineer) Feb 2017 - Present

Design of an on device Deep Learning Super Resolution application for 4k to 8k video conversion

- Developed an on device application for 4k to 8k video conversion (also used for RTL design) based on Deep Learning Super Resolution network (SRGAN).
- Improved the performance and memory efficiency of the application by adding support for float to fixed point integer conversion of weight parameters and integer arithmetic based convolutions.
- Designed and implemented different compression/decompression algorithms for intermediate feature maps in DLSR CNN for efficient use of memory line buffers in the application design.

Fast Style Transfer (FST) based images for ambient mode display in TV

- Developed an efficient application for FST deep neural net and implemented it on DT for ambient mode display.
- Improved memory efficiency of the application by implementing the kn2row method: a low memory general matrix multiplication (GEMM) convolution algorithm.
- Enhanced computational performance of FST application by substituting 2D convolution layers with depthwise separable convolution layers in the neural net.
- Pruned the FST CNN by using 8-bit integer weight parameters instead of 32-bit float parameters in the network using Quantization-aware training in TF framework.

Porting of HEVC and AV1 video CODEC onto Samsung TV processor

- Lead the development of HEVC (H.265) - MAIN 10 profile and AV1 standard decoder - applications and their modularization into independent components on Samsung TV processor.

Innoplexus Consulting Services Pvt. Lmt

(Research Analyst) Jun 2016 - Oct 2016

Indexing Patent-Text documents for efficient retrieval

- Worked on indexing pharmaceutical patent documents according to the keywords present in the text .
- Retrieved pharmaceutical patents text data by web crawling and extracted keywords from them using Rapid Automatic Keyword Extraction (RAKE) method.

Smartron India Pvt. Lmt

(Summer Intern) May 2015 - Jul 2015

Android device functionality testing

Instrumental in the development of the tool for automatic execution of scripts for testing core functionalities in an android mobile phone.

TECHNICAL PROJECTS

Design of queue line token system at hospitals - IIT Delhi

Jan 2016 - May 2016

Design project, Guide: Prof.M.Balakrishnan, CSE, IIT Delhi

- Designed and developed a digital token system for displaying queue line status in hospitals.
- Added features like registration of patients at reception, displaying patient information at doctor's doorstep, overall queue status at reception and an interface for processing queue at doctor's end point.

Design of Library Management database application

Jan 2015 - May 2015

Main project, Course: Introduction to Database Systems

- Designed and developed an end to end web based database application for managing books in a library using MySQL Database.
- Various protocols like Triggers, Virtual views and Foreign key exchange protocols were implemented in the application.

TECHINICAL SKILLS

Programming/Scripting languages : C++/C, Python, MATLAB.

Softwares/Tools : Caffe, Tensorflow, OpenCV, MongoDB, MySQL, Microsoft Visual Studio.

SCHOLASTIC ACHIEVEMENTS

- Secured rank 1008 (among 0.5 million students) in IIT-JEE - 2012
- Secured rank 1108 (among 1 million students) in the All India Engineering Entrance Examination (AIEEE) - 2012
- Cleared Professional level Programming Proficiency test in Samsung R&D Institute, Delhi

EXTRA-CIRRICULAR ACTIVITIES

Inter Hostel Cricket Tournament

IIT Delhi

- Led Shivalik hostel cricket team as vice-captain in Inter Hostel Cricket competition - IITD in 2013.
- Participated in the Inter Hostel Cricket tournament - IITD in 2013, 2014 and 2015.