MALLIKARJUN B R

No 156, NBH Hostel, IIIT-Hyderabad ◇ Telangana - 500032

(91) · 9964421652 ◇ mallik.jeevan@gmail.com

EDUCATION

International Institute of Information Technology (IIIT-H)   *December 2013 - Present*

MS by Research (Center for Visual Information Technology) in Computer Science Engineering

Courses: Statistical Methods in AI, Machine Learning(Audit), Optimization Methods, Computer Vision, Information Retrieval & Extraction, Digital Image Processing, Intro to Robotics.

Overall GPA: 8.66

Rashtreeya Vidyalaya College of Engineering (RVCE), Bangalore   *June 2011*

B.E. in Electronics & Communication Engineering

Courses: Artificial Neural Networks, Signals & Systems.

Overall GPA: 9.35

EXPERIENCE

Juniper Networks   July 2011 - January 2014

ASIC Engineer 2, Silicon and Systems Technology   *Bangalore, Karnataka*

· Part of ASIC development team, which delivered two generations of networking ASICs working on 28nm technology. These ASICs are currently being used in products such as QFabric and M & T-Series routers.

· Modelled a block called TOKEN which does the dynamic arbitration of packets across 1024x1024 Packet Forwarding Engines(PFE) with four levels of priority queuing for each PFE, for design verification.

· Part of Full-Chip verification team. Also contributed towards Gate-Level simulation and Functional Coverage.

PROJECTS

Face fiducial detection by consensus of exemplars

· Research project for thesis.

Face video synthesis

· Face space is represented (fairly) densely using a person's faces extracted from a video.

· Space is represented as a graph with face as nodes and edge weights based on pose and features from fiducial points.

· Various traversals in the graph explored to synthesize interesting videos.

· 3D video tensor factorization to extract identity and expression of an individual.

· Expression factor is introduced to another individual's identity to obtain similar change in expression.

Sign language detection using CNN

· Classification of English characters represented as hand signs in images.

· Convolutional Neural Networks(CNN) has been used to train the classes.

· Various configurations with data augmentation, dropout and non-linear functions have been experimented.

· Accuracy of 60% achieved as compared to 29% of baseline model based on Bag of Visual Words.

Document Layout Analysis

· Segmentation of document into semantically meaningful blocks using morphological processes.
· Each segment is categorized into text, table, heading and figure based on connected component analysis, Hough Transform.

Lead character recognition in a movie

· Extracted all faces from the video using haar features.
· LBP feature vector is constructed for each of the extracted faces.
· Clustering the feature points into clusters using k-means algorithm.
· Most similar faces with respect to top 2 clusters(based on the number of points in that cluster) are selected as the lead characters.

Search Engine for Wikipedia

· Preprocessed Wikipedia corpus of 44GB.
· Built inverted index for the corpus.
· Search engine based on tf-idf model was developed.

Twitter Entity Disambiguation

· Entity disambiguation of tweets. 61 different entities and corresponding tweets as the data set.
· Various features extracted considering labelled data set, entity's home and Wikipedia pages, WordNet etc.
· Supervised Machine Learning (Support Vector Machines) used to train and test the model.
· Achieved an accuracy of 40%-90% across entities.

3 Link Manipulator(Robot) path planning using Rapidly Exploring Random Tree

· Developed kinematic model of the robot.
· Exploring configuration space with obstacles using Rapidly Exploring Random Trees(RRT).
· Find the path from initial to final position avoiding obstacles.

Mobile Controlled Robot

· Robot navigation control using mobile network.
· Communication signal carries DTMF (Dual Tone Multiple Frequency), when a key is pressed.
· Signal is decoded to find the key pressed. Navigation is performed based on the input.

TECHNICAL STRENGTHS

Computer Languages   MATLAB, C++, C, System Verilog, Perl

PERSONAL ACHIEVEMENTS

· Awarded Infineon Scholarship for academic excellence in 3rd year at RVCE, Bangalore in the year 2011.

· Stood 1st academically in Electronics and Communication Engineering department, RVCE in the 1st and 3rd year. Secured 8th rank overall.

· Secured a rank of 259 among 120,000 students in a common entrance test for Engineering in Karnataka, India year 2011.

· Secured National level 17th rank in Mathematica (National Level Maths Exam) in the year 2005.