SHWETA PARDESHI
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Education

Degree	Institute	CPI/%	Year
B.Tech	IIT Gandhinagar	8.69	2017-present
Class XII	Gaurav College	86	2015-2016
Class X	K. A. Banthia Highschool	95	2013-2014

Internships

- **Summer Research Intern Programme IIT Gandhinagar** **[Time Period May 2019 – July 2019]**
  (Guide: Prof. Joycee Mekie, IIT Gandhinagar)
  - In this project, we derived an error probability model that can be used to investigate the MET effects in large circuits.
  - We came up with a model that captures failure probability due to various effects and accurately model them. The important factors that need be modeled to include the effects due to various masking.
  - The tools used are Cadence and Design Compiler.

Projects

- **HDR Video Generation using Deep Learning Techniques** **[July 2019 - present]**
  (Supervisor: Prof. Shanmuganathan Raman, IIT Gandhinagar)
  - Predicted future HDR frames with Generative Adversarial Network using previous aligned LDR images with alternating exposures.
  - Proposed an architecture that combines convolutional layers and Generative Adversarial layers to efficiently (fast and computationally feasible) convert LDR video to HDR.This architecture involves flow network (CNN model) for image alignment.
  - Based upon exploitation of temporal coherence in the video.
  - Compared results of image alignment using traditional optical flow method and CNN (flow) network
- **A Tensor-based Factorization Model of Semantic Compositionality** **[July 2019 - present]**
  (Supervisor: Prof. Mayank Singh, IITGn)
  - Studied the semantic relationship between different parts of the sentence compositions and model them mathematically using Tensors.
  - This involves deep understanding of decomposition of tensors and tensor products.
  - Implemented convolutional neural networks as well as bidirectional LSTM to model semantic compositionality of text.
  - Proposed a classical NLP model to give semantic verb replacement for complex sentences.
  - Used BERT model to provide word-replacements in the text that make sense semantically and implementing this to make "Sematicaly Sensible Thesaurus".
- **Scalable method of 4 bit training of neural networks** **[May - July 2019]**
  (Supervisor: Prof. Joycee Mekie, IIT Gandhinagar)
  - Implemented an algorithm which involves "Range-Batch Normalization" and "Quantized Back Propagation" Techniques.
  - Trained Fully Conncted Network, Covolutional Network and Recurrent Network on the imagenet as well as on cifar-10 datasets and reported the accuracies.

Technical skills

- **Languages:** Python,Verilog, Matlab, Basics of Arm Assembly Language Verilog

- **Tools:** Keras, Tensorflow, LaTex, Vivado Design Suite, Autodesk Inventor Professional

Relevant Courses

- Natural Language Processing, Computer Architecture, Multivariate Calculus, Linear Algebra, Differential Equations, Complex Analysis, Probability and Statistics, Probability and Random Processes

Areas of Expertise and Other Significant Activities

- **Research areas of Interest:** Machine Learning, specifically neural network architectures and optimization; Computer Vision.
- Awarded the **Dean's List** for academically meritorious students in **Semester II, III, IV and V**. (2017-19)
- Participated in **VLSI Design'19** and **International Test Conference'19** conferences
- Secured 'A' grade (10/10) in 'Signals, Systems and Networks', 'Electrical Machines', 'Mathematics III' and 'Computer Organisation Architecture'.
- Guest Author at **Analytics Vidhya**
- Participated in **Inter-IIT Cultural Meet (Dance)** representing IIT Gandhinagar twice in 2017 and 2018
- Mentor, Academic Discussion Hours (ADH) of Introduction to Electrical Systems under Earn While You Learn Programme (EWYL) at IIT Gandhinagar. (2018)