Adhitya Swaminathan

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EDUCATION

Indian Institute of Technology, Banaras Hindu University - *Bachelor of Technology*

July 2015 - May 2019

- Majored in Metallurgical Engineering
- Cumulative Grade Point Average : 8.71 / 10

Chettinad Vidyashram, Chennai - *Senior Secondary School*

April 2013 - April 2015

- Specialization in Physics, Mathematics, Chemistry and Computer Science.
- Final Examination Score : 93.4%

TECHNICAL EXPERIENCE

Video Analytics Lab, Indian Institute of Science - *Research Intern*

May 2018 - December 2018

- Worked with Prof. Venkatesh Babu towards designing a DNN architecture for Deep Learning based HDR Alignment and Fusion.
- The overall network is capable of extremely fast alignment and fusion of high resolution images.
- Paper accepted at IEEE International Conference on Computational Photography 2019, Tokyo.

Computer Vision Lab, Indian Institute of Technology, Madras - *Research Intern*

May 2017 - November 2018

- Worked with Prof. Anurag Mittal to design an Unsupervised Intelligent Video Summarization Network.
- We introduced the concepts of saliency scores and a variance-maximizing loss function to promote sparsity.
- Achieved a boost in accuracy of over 10%. Paper submitted to IEEE Transactions In Image Processing (TIP) for review**.**

Metallurgy Department, Indian Institute of Technology, BHU - *Project Leader*

January 2018 - November 2018

- Worked with Prof. V. Jindal and Prof. K. K. Singh, towards the Application of Neural Networks to model Electric Arc Furnaces (Thesis Project).
- Built a multi-layer perceptron in Python and wrapped it in a GUI written with Qt4. This was trained with real-time data from an Aluminium plant.

PACE Lab, Indian Institute of Technology, Madras - *Intern*

December 2016

- Worked with Prof. Rupesh Nasre, of the PACE Lab, IIT Madras. Designed and implemented a Shell for Combinatorial Graph Applications in C++.
- Created the graph data structure from scratch, and implemented popular graph algorithms for this data structure.
- Verified the project's accuracy and scalability with the Stanford SNAP dataset. The code is available in the GitHub repository.

SKILLS

Programming Languages : Python, C++, C

Libraries : Tensorflow, Keras

Frameworks : Git, LaTeX

RESEARCH INTERESTS

Machine Learning (Deep Learning), Computer Vision, Robotics

PUBLICATIONS

1. *A Fast, Scalable, and Reliable Deghosting Method for Extreme Exposure Fusion*, IEEE International Conference on Computational Photography 2019.

TECHNICAL POSITIONS HELD

CSE Department, Indian Institute of Technology, Varanasi - *Teaching Assistant*

January 2018 - May 2018

- Teaching Assistant for CSO-101 (Introduction to Computer Programming).
- Responsible for conducting lab classes for over 120 freshmen.
- Regularly conducted quizzes to test competency.
- Graded final examination answer scripts for the course.

OPEN COURSEWARE

Introduction to Computer Science (CS50), Harvard University

Mathematics for Computer Science, Massachusetts Institute of Technology

Introduction to Algorithms, Massachusetts Institute of Technology

Introduction to Probability, Harvard University

Convolutional Neural Networks for Visual Recognition, Stanford University