Deep Kiran Shroti

Electronics and Electrical Communication Engineering
(Specialization in Visual Information Processing and Embedded Systems)
Minor Course: Computer Science and Engineering (B. Tech.)

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Examination	University	Institute	Year	CGPA/Marks
Graduation	IIT Kharagpur	IIT Kharagpur	2017	**9.20/10**
AISSCE	CBSE	Delhi Public School, Bhopal	2011	**95% (PCM)**
AISSE	CBSE	Delhi Public School, Bhopal	2009	**91.6%**

INTERNSHIP AND ACADEMIC PROJECTS UNDERTAKEN

1. Multimedia Labs, Avaya India Pvt Ltd.
May – July 2015

Project: Integration of Co-browsing facility in Unified Communications System with annotation capabilities.
Guide: Dr. Ramanujan Kashi, Research Director, Avaya India Pvt Ltd., Bangalore.
- Developed multiparty web-sharing solution that enables moderator to share web browsing session without local software.
- Added annotation capability that enables any participant to do annotation with different colours on moderator's webpage.

2. Machine Intelligence & Expert Systems , Indian Institute Of Technology, Kharagpur
July – December 2015

Project: Detecting imposter by key stroke dynamics and analyzing effect of mood of a person on key stroke dynamics.
Guide: Professor Sudipta Mukhopadhyay, Department Electronics & Electrical Communication Engineering, IIT Kharagpur.
- Predicted mood of a person using K-Nearest Neighbour on facial key points (Reference paper- "Facial Key point detection").
- Identified different user's key stroke dynamics using Gaussian Mixture Model.

3. Machine Learning , Indian Institute Of Technology, Kharagpur
July – December 2014

Project: Combining player's incomplete statistics to predict outcomes of tennis matches.
Guide: Professor Sourangshu Bhattacharya, Department of Computer Science and Engineering, IIT Kharagpur.
- Implemented SVM with radial basis function kernel to classify multivariate data set of 127 instances and 42 attributes.
- Succeeded in achieving a cross validation error of 4.76% for optimized sigma and optimized C value.

CURRENT ACADEMIC PROJECTS

4. Anomaly Detection in Surveillance, Indian Institute Of Technology, Kharagpur
January 2016 - present

Project: Anomaly detection in surveillance video using deep learning techniques.
Guide: Professor P. K. Biswas, Head of the Department, Electronics & Electrical Communication Engineering, IIT Kharagpur
- Implemented Convolutional Neural Network, Deep Belief Network on MNIST dataset and achieved an accuracy of 98%.
- Improved the speed in training dataset by approximately 3.8 times on a GPU instead of a CPU by using Caffe.

5. Speech and Natural Language, Indian Institute Of Technology, Kharagpur
July 2015 - present

Project: Plagiarism detection in programming language source codes using Natural Language Processing Tree kernel methods
Guide: Professor Pawan Goyal, Department of Computer Science and Engineering, IIT Kharagpur
- Devised and implemented a plagiarism detection architecture using Subtree, Subset Tree and Partial Tree Kernel.
- Increased the tenfold cross- validation accuracy from 50% using language model to 78% using kernel tree methods.

CLASSROOM PROJECTS

Computing Laboratory	Implemented a custom Linux shell, Multi-Process Multi Thread Management, Search system using Skip List and GraphViz for visualization, A song-singer search system using R and Hadoop and built a search system on the lines of PageRank for Amazon food database using R.
Digital Communication	Designed an intelligent transmitter-receiver system, which can adapt according to the changing channel parameters. Features include Noise Detection and Adaptation, Jammer detection and adaptation.
VLSI Laboratory	DFT (Discrete Fourier Transform) implementation on Xilinx ISE Design Suite using Verilog.

SCHOLASTIC ACHIEVEMENTS

- Awarded **Distinction in Science** in International Assessment for Indian Schools by **University of New South Wales.** **[2008]**
- Secured a **Department Change** to Electronics and Electrical Communication Engineering with a **CGPA** of **9.47.** **[2013]**
- Awarded Gold Medal in **National Mathematics Olympiad** Contest by All India Mathematics Teacher Association. **[2009]**
- Secured an All India rank of **212** in **8th National Cyber Olympiad** organised by Science Olympiad Foundation. **[2009]**
- Scored a **percentile of 96.67** in the 12th **National Science Olympiad** organised by Science Olympiad Foundation. **[2009]**
- Awarded **Maroon Blazer** for 85% and above for consecutive **7 years** in Delhi Public School, Bhopal. **[2011]**

TECHNICAL SKILLS AND PROFICIENCIES

Programming Languages	• Python	• C/C++	• JavaScript	• Node.js	▪ HTML5+CSS
Numerical and Design	• MATLAB	• R	• Hadoop	• Verilog	• Google SketchUp
Other	▪ Latex	• Microsoft Office	• Linux Programming		
Operating Systems	• Windows (XP/Vista/7/8)		• Linux(Ubuntu/ CentOS)		

COURSES UNDERTAKEN   *Practical Component Included #Pursuing in current semester

- Pattern Recognition and Image Understanding#
- Speech & Natural Language Processing
- Machine Intelligence & Expert Systems
- Visual Communication#
- Machine Learning
- Operation Research
- Algorithms*#
- Computing Lab
- Digital Image Processing*
- Digital Signal Processing*
- Probability and Stochastic Processes
- Programming and Data Structure

POSITION OF RESPONSIBILITY

Senior Hall Coordinator, R.P. Hall of Residence, Student Welfare Group, IIT Kharagpur **[2014]**

- Inducted a team of 18 wing representatives to maximize the reach of student counselling and advisement program.
- Organized a workshop on crisis and behaviour management which was attended by all sophomores of R.P. Hall.

EXTRA CIRCULAR ACTIVITIES

National Cadet Corps

- Passed the **C certificate Examination** under the authority of **Ministry of Defence**, Government of India. **[2014]**
- Awarded the rank of **Cadet Corporal** by National Cadet Corps. **[2014]**

Cultural

- Awarded State **Gold Medal** in All India Child Art Competition held by **Child Art Club**. **[2002]**
- Certificate of Merit for securing **First position** in Inter House Painting Competition in School. **[2006]**
- Stood **Second** in Bhopal in painting competition organized by AFC, Bhopal. **[2004]**

Sports and Games

- Part of **Gold** &**Bronze** Winning Inter House Football Team of the School. **[2007, 2011]**