Vasu Sharma

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EDUCATIONAL QUALIFICATIONS

Year	Degree/ Certificate	Institute/ School, City	CPI/ %
2012-present	Bachelor Of Technology ,Computer Science and Engineering, minor in Signal Processing(Electrical Engg.)	Indian Institute Of Technology, Kanpur	CPI=**10.0/10.0** **Institute Topper**
2012	AISSCE(Class XII CBSE Board)	St.Columba's School ,New Delhi	**97%**
2010	AISSCE(Class X CBSE Board)	St.Columba's School ,New Delhi	CGPA=**9.4/10**

PUBLICATIONS

- **"Analyzing Newspaper Crime Reports For Identification Of Safe TransitPaths"**
  - Submitted to IEEE's "Spoken Language Technology" Conference,Nevada,2014
  - This paper proposes a method to find the safest path between two locations, based on the geographical model of crime intensities
  - This paper describes how the techniques of topic modeling like Latent Dirichlet allocation, Latent semantic analysis along with mathematical modeling and NLP techniques were successfully employed to identify the safest path based on model of crime intensities.
- "**A Gated Recurrent Neural Network for denoising speech signals**"
  - Submitted to IEEE's "Spoken Language Technology" Conference ,Nevada,2014
  - The paper focuses on Signal reconstruction and noise removal to denoise noisy signals by using deep and recurrent neural networks.
  - The neural network design is used to combine noise estimation and denoising into a single network design, effectively doing both simultaneously.
  - The focus is to enhance intelligibility of speech signals by successfully removing the noise without distorting the original signal

PROJECTS AND INTERNSHIPS

- **Summer Internship '14 at School Of Computer Science, Carnegie Mellon University**
  (Mentors: Dr. Rita Singh , Dr. Bhiksha Raj)   *(May –Jul '14)*
  - **"Application of Deep Learning for Audio and Speech Signal Processing"**
  - Created a **Time Delay Neural Network** for **dynamic spectral subtraction** to clean noisy signals.
  - Techniques used: **Recurrent and Time DelayNeural Networks, Spectral Subtraction,Multi Layer Perceptrons and other Deep Learning techniques**
- **'Identifying safest path in Real time based on crime records'** *(Mentors:Dr. Bhiksha Raj , Dr. Rita Singh)*
  Carnegie Mellon University's Winter School   *(Dec '13)*
  - Awarded **Overall Best project.**
  - Selected for **Gandhian Young Technological Innovation Award***(Mar '14)*
  - Techniques used:**Latent Dirichlet Allocation, Latent Semantic Analysis, Named Entity Recognition, k nearest neighbors**,**Bag of Words model, Probabilistic modeling etc.**.
- '**Image Summarization using Topic Modelling'** *(Mentors:Dr. Bhiksha Raj , Dr. Rita Singh)*
  Carnegie Mellon University's Winter School   *(Dec '13)*
  - Awarded **Overall Best project.**
  - Techniques Used: **Scale Invariant Feature Transforms, Latent Dirichlet Allocation, K means clustering, Bag of Words Model etc.**

- **'Education based Webapp for Primary education'**   *(Mar '14)*
  - Secured **2ⁿᵈ Position** in El-Eduvate (**Techkriti, Technical Festival, IIT Kanpur**)
  - Used HTML, CSS, Javascript, PHP to design webapp.
- **' Karaoke Generator Webapp with vocal comparison'**   *(Yahoo!'s R & D team)*
  - **Honorable mention.**   *(Oct '13)*
  - Techniques Used: **Audio and Speech Processing, Vocals extraction and removal, Heuristic based vocal comparison.**
- **'Content based Image retrieval'** -Microsoft's Windows OS/Phone App development competition (*Jan '14*)
  - Techniques Used: **Viola-Jones Face recognition, Scale Invariant Feature Transforms, Image meta-data extraction, SVM**

SCHOLASTIC ACHIEVEMENTS

- Awarded the prestigious **World Quantitative and Science Scholarship**from**Worldquant** (Among the 30 students from all over the world and 2 from India chosen across all years and departments)
- Shortlisted for the prestigious **Aditya Birla Scholarship** 2012.(Among the 25 students chosen from India)
- Selected for **S.N. Bose Scholars program** and **University of California, Irvine's** Internship program
- **IIT-JEE** examination :All India Rank of **165** out of 5,00,000 students
- **AIEEE** examination :All India Rank of **93**out of 1.5 million students
- **ISAT**(Indian Institute of Space Technology) :All India Rank of **65**out of 1 million students
- **UPSEE**(State Entrance Exam) :All India Rank of **12** out of 1.2 million students
- Received the Academic excellence award for the outstanding academic performance in the year 2012-13
- **Scholarships** Received:
  1. National Talent Search Exam **(NTSE)**
  2. Junior Science Talent Search Exam (**JSTSE**)
  3. Kishore VaigyanikProtsahanYojana **(KVPY)**
- **Olympiads** Cleared**:**
  1. **International Informatics Olympiad** (Silver Medal)
  2. **National Standard Olympiad in Physics** (Top 1% of the country)
  3. **National Standard Olympiad in Chemistry**(Among the 200 students clearing 1ˢᵗ stage)
  4. **International Assessment for Indian Schools**(conducted by University of New South Wales) (1ˢᵗ position **Internationally** in Science and 1st Position in Delhi in Maths)
  5. **National Cyber Olympiad** (Silver Merit)
  6. **National Science Olympiad** (Delhi Topper)
  7. **National Mathematics Olympiad** (School Topper)
- Obtained an All India Rank of **45** in **National Science Talent Search Exam**(NSTSE)
- Received Certificates for Outstanding Performance in ASSET test conducted by University of New South Wales, Australia

TECHNICAL SKILL SET

- **Programming Languages**: C, C++, R ,Python, SQL, HTML, Javascipt, PHP, BASH,Bluespec Verilog
- **Software/Editors Knowledge**: Octave, Latex, MS Office, AutoCAD, VIM, Emacs, Git, Photoshop

RELEVANT COURSES DONE

Code	Course Name	Grade	Code	Corse Name	Grade
ESC101	Fundamentals of Computing	A*	ESO 208	Numerical Methods	A*
CS210	Data Structures And Algorithms	A	MTH101	Mathematics –I (includes Calculus)	A
CS251	Computing Laboratory	A*	CS 202	Intro. To Logic	A
MTH102	Linear Algebra and Ordinary Diff. Eqn's	A*	CS345	Advanced Algorithms	Ongoing
MSO201	Probability and Statistics	A*	EE200	Digital Signal Processing	Ongoing
CS252	Computing Laboratory II	Ongoing	CS201	Discrete Maths	A

Coursera	Machine Learning	Distinction	CS330	Operating Systems	Ongoing
CS340	Theory of Computation	Ongoing	Coursera	AlgorithmDesign and Analysis	Distinction

EXTRA CURRICULAR ACHIEVEMENTS

- 5th position in The **Oracle Think quest '09** (International **Website Designing** Competition)
- Awarded **"SudarshanKasturia Memorial Scholarship"** by IIT Kanpur for All Round Excellence and leadership
- Awarded the "**Outstanding Freshman of The Year**" by Student's Gymkhana, IIT Kanpur *(2012-2013)*
- Won a **Silver and a Bronze medal in Aquatics** at **Inter IIT Meets** 2012,2013
- The **best ever individual** performance by a first year student in the Inter IIT meet from IIT Kanpur
- Received the prestigious **Sports Scholarship** for **leadership & excellence** in sports
- Awarded **Best Incoming Sportsman '12** by the Games and Sports Council, IIT Kanpur
- National Cadet Corps**(NCC)**
    1. Received the **Sahara India** Cadet's Welfare **Scholarship,** 2009
    2. Received the Highest Rank of **Sergeant** and cleared the 'A Certificate' exam
- Received Raman Subramanyam Award for **All Round Excellence** and Vijay Srinivasan Award for **Brotherhood And Service** from St.Columba's School
- Won the programming competitions 'Fossdev','Blackbox' and 'Crypto' in Takneek 2012.,IIT Kanpur
- 2nd Position in **Delhi State Chess** Championship as well as in in Botwinik Chess Championship