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ACADEMIC DETAILS

- Indian Institute of Technology (BHU) Varanasi, India
  Integrated Dual Degree (B.Tech. + M.Tech.) in Computer Science and Engineering (Current GPA: **9.91/10**)

Semester	I	II	III	IV	V	VI
SPI (each out of 10)	9.79	9.65	10.00	10.00	10.00	10.00
YGPA (each out of 10)	9.72		10.00		10.00	

- St.Sophia Sr.Sec. School, Paschim Vihar, New Delhi, India
  All India Senior School Certificate Examination | Score: 96.8%
- KCM School, Moradabad, U.P., India
  Central Board of Secondary Education (CBSE) Examination (CGPA: 10)

FIELDS OF INTEREST

- Machine Learning, Computer Vision, Deep Learning, Cryptographic Applications of Neural Networks, Data Structures, Algorithms

TECHNICAL SKILLS

- **Languages**: C/C++, Python, LaTeX, BASH, Java (Basics), HTML, CSS, SQL, JavaScript, GNU-Octave(Basic), Git (basic)
- **Frameworks/Technologies**: Django, MySQL, Eclipse, IntelliJ, Android Studio, Robot Operating System (ROS), Gazebo, Simulink (MATLAB)

INTERNSHIPS AND PROJECTS

- **Autonomous Underwater Vehicle (AUV) (Ongoing)** (Project)
  Indian Institute of Technology (BHU) Varanasi
  Guide: Prof. H.P.Gupta, November 2016 - Present
  - Currently developing an underwater vehicle that is capable of moving autonomously underwater detecting objects of interest using Computer Vision.
  - Built a model for autonomous gate detection with visual assistance from Raspberry Pi and navigate through it using integration of motors. (basically an autonomous tracker and seeker bot).
  - Working on building the software stack of the AUV using ROS and Gazebo, working on developing the control systems of the bot using PID control, and also a member of the CV Team.
  - Also presented a poster on the prototype built so far on the Institute Day of our college along with a live demonstration of the same.
  - Successfully participated in the 1st round of NIOT SAVe, 2018 competition, getting selected in the top 18 institutes in the country.
- **Secure Machine Learning using MPC** (B.Tech Project)
  Indian Institute of Technology (BHU) Varanasi
  Guide: Prof. K. K. Shukla, Jan-Present 2018
  - Development and implementation of protocols to realize secure computation of machine learning algorithms using Secure Multi-party computation, along with the implementation of the cryptographic primitives required.
- **Summer Internship @Amazon Development Centre, Hyderabad** (Internship)
  Amazon Development Centre, Hyderabad, India
  Guide: Mr. Ritesh Gupta, May 2018 - July 2018

- Worked with the Amazon Business Team towards developing a full-fledged solution for PunchOut customers to enable easier customization of PunchOut Setup Request (POSR) and PunchOut Order Message (POOM) document fields.
- Worked on ElasticSearch and Snuggy Code Coverage tools as well.

- **Emotion Recognition on Static Facial Images** (Project)
  Indian Institute of Technology (BHU) Varanasi
  Project Mentor: Prof. K.K.Shukla, Jan 2017 - May 2017
  - Used various machine Learning techniques as well as semi-supervised learning to improve the accuracy of various classifiers on the CK+ database. Using FACS coding, features were detected from the faces.
  - Presented a survey focusing on different classifiers, along with their obtained evaluation metrics as well as future work and challenges in the field.
  - Exposure: Scikit-learn, Numpy, Pandas, Keras

- **Cryptographic Applications of Machine Learning** (Internship)
  Defense Research and Development Organization, New Delhi (SAG)
  Guide: Dr. Saibal Pal, May-July 2017
  - Implemented different deep learning architectures to improve the efficiency of cryptographic mechanisms as well as develop cryptographic schemes based on deep neural networks.
  - Also implemented papers to allow for deep learning architectures to run on resource-constrained embedded devices as well developed recurrent neural networks for binary data.
  - Implemented different deep learning architectures such as Hopfield Networks, Autoencoders, Boltzmann Machines, Restricted Boltzmann Machines (RBMs), Convolutional Neural Networks, Echo State Networks, LSTMs.
  - Also implemented recurrent neural networks for intrusion detection.
  - Worked towards building a neural network to perform distinguishing attack on cryptographic schemes.
  - Exposure: Tensorflow, Keras

COURSE PROJECTS

- Designed and implemented a database management system in MySQL with a web interface for managing the day-to-day operations of Chirag Nursing Home, a clinic in Moradabad, Uttar Pradesh, India.
- Implemented a Unix shell environment in C++ with many built-in commands, signal handling, I/O redirection, and piping.
- Implemented a server and client chat application with multiple clients and groups functionality using sockets, threading, and Tkinter in Python.
- Developed a full-stack Gymkhana website using Bootstrap for FrontEnd, Django framework for BackEnd, and MySQL for querying the database. Additional features included a mail box, and integration of chat application with the website.
- Wrote a term paper on Booth's Algorithm, Array Multipliers and other multiplication algorithms for the multiplication of numbers in computer architecture.
- Implemented a POS tagger based on Hidden Markov Models.
- Worked towards developing a software for Hospital Management, using the principals of software engineering, starting with the Requirement Specification, along with the Class, Sequence and Use case diagrams, using the Evolutionary Software Development Model.

ACHIEVEMENTS/CO-CURRICULAR ACTIVITIES

- All India Rank 905 in IIT-JEE Advanced 2015.
- **Computer Science Department Rank-1** in 1st, 2nd and 3rd year and currently **Institute Rank 1**.
- Secured Rank 259 in JEE-Mains 2015.
- Received the "IIT Color" Award from the IIT (BHU) Gymkhana during the session 2017-18 (for contribution to Media and Journalism).
- Machine Learning co-coordinator for MLWare in Technex (Techno-management fest of IIT-BHU, Varanasi),2017.
- Secretary of The Media Club, IIT (BHU), Varanasi for the session 2017-18.

- Co-Head of the Publicity Team, FMC Weekend 2017 (Film and Media Festival, IIT(BHU), Varanasi).
- Coordinator for the event "Opinionated-You", the creative writing event in FMC Weekend 2016.
- Member of Publicity Team of CodeFest, 2016 (departmental fest of Computer Science Department at IIT BHU).
- Content-Writer for the Quest, IIT-BHU's monthly newspaper as well as "IIT-BHU Connect", the institute's newsletter.
- Also participated in Microsoft's code.fun.do in January 2016 as well as other robotics' events in Technex'16.