Shristi Raj

Computer Science Undergraduate

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Education

Indian Institute of Technology(BHU), Varanasi — *CGPA: 9.85/10.00*

B.Tech in Computer Science and Engineering — *2016-2020(Expected)*

St. Michael's High School — *94.6%*

All India Senior School Certificate Examination (CBSE) — *2014-2016*

St. Xavier's High School — *96.4%*

Indian Certificate of Secondary Education (ICSE) — *2004-2014*

Technical Skills

- Languages: C, C++, Python, HTML, CSS, SQL, Java, Bash
- Framework & Utilities: Django, Git, Keras, MATLAB, Android Studio, MySQL, LaTeX , Eclipse, Spring
- Areas of Interest: Algorithms, Software Development, Artificial Intelligence

Research & Work Experience

Peer Recommendation System

IIT Varanasi

Bachelor's Thesis, Guide:Dr. Ravindranath Chowdary C — *Jan. 2019 – Present*

- Designed a model to recommend possible research peers to a user efficiently by modelling all the authors along with their attributes using application of Attributed Common Query method.
- Networked the authors using Core-Label Tree Index to maintain the structure and keyword cohesiveness property.
- Modelled a real-time community search model by deploying a decremental training algorithm capable of self-expansion of the attributes of the nodes.

Summer Analyst at Goldman Sachs

Goldman Sachs, India

FICC-SMM (Fixed Income Currencies Commodities-Strategic Market Making) Core Engineering Team — *May 2019 – July, 2019*

- Developed UDP Pcap Recorder and Replayer in C++ to record the data in Publisher and added features to subscribe new data streams.
- Developed Stream Adapter in C++ and Python based auto Encoder and Decoder to enable subscription of Reference Data Streams.
- The new model is now in production being used by many Sales team worldwide which decreased Complexity of Existing Environment by recording file in Pcap format instead of ASCII.
- The project had eliminated heavy template-based encoders and decoders, reduced storage in the database by half.

Science Academies' Summer Research Fellow

IIT Kharagpur

Indian Academy of Sciences — *May 2018 – July 2018*

- Worked on a kernel density estimation based deep learning approach for real-time classification of events in a power system.
- Designed Multilayer Perceptron (MLP) network for multi-class softmax classification in Keras to optimize the classification task.
- The method uses only 0.2 s data window for feature extraction offering low computation and fast execution.
- The proposed method is further validated on real PMU data obtained for a multiple disturbance case in the Eastern region and it offers lower computational complexity and better real-time performance. The work got published in IEEE Transactions.

Key Projects

Database Management System Project

IIT Varanasi

Guide:Dr. Ravindranath Chowdary C — *Aug. 2018 - Dec. 2018*

- Designed an entity relationship model to manage assets at a mobile store and translated the model to the relational schema.
- Developed interfaces to store, manipulate and search cell phones and accessories by customers.
- Programmed front-end using bootstrap, CSS, Javascript and backend using Java Swing, JDBC and MySQL.

Bash-like Shell for File Transfer

IIT Varanasi

Guide: Dr. Bhaskar Biswas — *Jan 2018 – May 2018*

- Implemented a File Transfer Protocol(FTP) client-server application using C Stream Sockets Library in C++.
- multi-threaded client shell capable of handling standard Linux commands in addition to few custom commands.
- Supported features like pipe, IO redirection, signal handling, foreground and background processes.

Hostel Management System *IIT Varanasi*

Guide: Dr. Amrita Chaturvedi *Aug 2017 – Dec 2017*

- developed a full-stack web application to manage various activities in the hostels for students.
- Created interactive user and admin portals for viewing and changing data.
- Supported features like Django-messages, Gmail authentication, RSS feed and Internationalization.
- Technology Stack: Python, Django, CSS, HTML, SQL, MVC Architecture

Relevant Courses

- **Computer Science :** Software Engineering, Computer Architecture, Information Retrieval, ITW-I Unix Shell Programming, Computer Graphics, DBMS, Data Mining, Operating Systems, Artificial Intelligence, Algorithms, Data Structures, Computer System Organization, ITW-II Web Development, Computer Programming
- **Mathematics :** Theory of Computation, Discrete Mathematics, Probability and Statistics

Publication

Real-time Event Classification in Power System with Renewables using Kernel Density Estimation and Deep Neural Network
IEEE Transactions on Smart Grid, 2019 *Authors: Shristi Raj, Ravi Yadav, Ashok Kumar Pradhan*

Positions of Responsibility

Teaching Assistant *IIT BHU, Varanasi*

Aug. 2018 - Dec. 2018

Tutor for CSO 101 - Introduction to Computer Programming and Linux course offered to Freshmen Undergraduates.

Microsoft | Codess'18 Student Representative *Microsoft, India*

Mar. 2018 - May. 2018

Selected for Microsoft Codess'18 Meet, went to hyderabad campus visit and got an opportunity to network and hear from a panel of senior technical women. Participated in the Product Hackathon mentored by the Microsoft engineers. Organized four teams for a summer project mentored by Microsoft Engineers, lead one of them, managed the communications and meetings between mentors and students.

Institute Student Mentor *IIT BHU, Varanasi*

Jul. 2017 - Aug. 2017

Responsible for guiding 20 freshmen focusing on their academic and holistic development, providing counsel.

Academic Achievements & Extracurricular Activities

- Awarded the Student Scholarship to attend the Grace Hopper Celebration of Women in Computing'19.
- Selected as one of 300 students nationwide for Science Academies' Summer Research Fellowship, 2018. Awarded to bright students to work with scientists associated with the three Academies IAS, INSA or NASI on research-oriented projects.
- Awarded the Kasi 1981 Merit-Cum-Means Scholarship twice for academic year 2017-19.
- Cleared the prestigious IIT-JEE Advanced Exam 2016 and was ranked among top 0.1% of 0.2 million students appearing.
- Obtained 99.99 percentile in JEE Mains 2016 among 1.5 million candidates.
- Former member of IIT BHU Athletics team (won bronze at Spardha 2017, IIT BHU).
- secured first rank in SheCoders Nucleathon 2019 organised by Nucleus Software.
- Selected as one of 10000 students nationwide for the All India Scholarship Entrance Examinaion(AISEE) scholarship, 2016.