

# Shristi Raj

COMPUTER SCIENCE UNDERGRADUATE

IIT Girls Hostel, IIT (BHU) Campus, Varanasi-221005, Uttar Pradesh, India

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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, L<sup>A</sup>T<sub>E</sub>X, 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

Bengaluru, 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 real time detection, identification and spatial localization of dynamic events in power network.
- Generated data from IEEE-39 bus standard power system model simulated in DigSilent/PowerFactory Software.
- Designed Multilayer Perceptron (MLP) network for multi-class softmax classification in Keras to optimize the classification task.
- Compared DNN results with other conventional Machine Learning like K-nearest Neighbor, SVM, Decision Tree and others.

## Key Projects

### Database Management System Project

IIT Varanasi

GUIDE:DR. RAVINDRANATH CHOWDARY C

Aug. 2018 - Dec. 2018

- Developed a management system for a mobile shop to store, manipulate and search cell phones and accessories by customers.
- Designed an ER model and translated the model to the relational schema for the management system.
- Created and implemented a desktop application using Java Swing, JDBC and MySQL. For front-end, bootstrap, CSS, Javascript are used.

### 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 and supported features like pipe.

## Exploratory Project

GUIDE: DR. K. K. SHUKLA

IIT Varanasi

Jan 2018 – May 2018

- Explored the field of Data Science in Python (Numpy, Scipy, Matplotlib, pandas)
- worked on the implementation and comparison of supervised Machine Learning Algorithms on various datasets from UCI Repository.

## Hostel Management System

GUIDE: DR. AMRITA CHATURVEDI

IIT Varanasi

Aug 2017 – Dec 2017

- developed an end-to-end web application with front end using CSS, bootstrap
- supported features like social-media, internationalization and RSS
- Technology Stack: Python, Django, CSS, HTML, SQL, MVC Architecture

## Relevant Courses

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- **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

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### 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

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### Microsoft | Codess'18 Student Representative

Hyderabad, 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.

### Teaching Assistant

IIT BHU, Varanasi

Aug. 2018 - Dec. 2018

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

## Academic Achievements & Extracurricular Activities

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- 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.
- Member of Club of Programmers, IIT BHU.
- Selected as one of 10000 students nationwide for the All India Scholarship Entrance Examination(AISEE) scholarship, 2016.