

# Himanshu Shekhar

Undergraduate

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## Education

2015–2020 **Indian Institute of Information Technology, Allahabad.**

5 Year Dual Degree B. Tech. IT and M. Tech. Robotics  
CGPA: 8.78 (6 semesters)

2013–2015 **Class XII, CBSE.**

Mathematics with Computer Science  
95.2%, being top 0.1% in Mathematics across country

## Experience

May–July **SocialCops**, Backend Engineer Intern.

- 2017 ○ Build a Python SDK for underlying MongoDB to abstract and optimize complex queries with clean object-oriented API.
- Provided API for cross-collection query from methods of a class and benchmarking expensive ones.
- Build performance reporting tool for support team which generates multi-dimensional and granular reports on CRM activities.

Apr **Technical Society, IIIT-Allahabad**, Software Development Coordinator.

- 2017–Present
- Organize workshops and talks to motivate students towards software development
  - Developed alumni portal to manage profiles and events

## Projects

Jan - May **Intent based Robot Grasping**, Python, Matplotlib, PyTorch, CNN, OpenCV.

- 2018
- Training a neural network to recognize optimal rectangle to grasp an object.
  - Created data-pipeline for optimising memory usage by **lazy-loading training data**.
  - Created tool to label rectangles on training images using OpenCV based GUI.
  - Worked on four neural network architectures (Linear + CNN) to compare the results.
  - Poor performance due to low amount of data.

March 2018 **Speaking Geo-GP Assistant**, NodeJS, MongoDB, Geospatial queries and viz.

- Runner up at Smart India Hackathon 2018, ISRO.
- Built a voice assistant to help policy makers take data-driven decision using geospatial data obtained from satellite imagery.
- Implemented geographical queries and custom queries on geojson using MongoDB.
- The assistant responds back in English, Hindi and Bengali.

March 2018 **Aerially**, NodeJS, Ethereum.

- Runner up at Hack In The North 3.0, IIIT-Allahabad.
- Built a smart-contract platform for airlines to transfer overbooked passengers to alternate flights.
- Each transaction of migrating a passenger is a smart contract between two operators.
- Used Ethereum's eventing mechanism to monitor events.

Dec 2015 - **ProxyMan**, Bash.

- Present
- Lets you configure system-wide proxy settings on Linux.
  - Written in bash and standard POSIX tools, no dependency required.
  - Manages config for GNOME gsettings, bash, apt, dnf, git, npm and Dropbox.
  - Appreciated by community with more than 150+ stars on GitHub and more than 2000 downloads.

Jan 2018 **Dexter**, Python, JavaScript, NLP.

- o Won 1st Prize at Hack36, annual hackathon of MNNIT-Allahabad.
- o Voice controlled code-editor for the disabled.
- o Voice instructions are converted to text and then converted to Python/JavaScript code using Fuzzy logic based NLP parser.
- o Entire NLP takes place on the browser in JavaScript.

Oct 2017 **Expedite**, Python, Django, MySQL, ReST API.

- o Won first prize at IIIT-Hacks, 2017, IIIT-A's annual internal hackathon.
- o Bridging customer issues on social media to customer support.
- o Comments/Reviews on social page gets registered on company's CRM.
- o Neural Network based classifier classifies and assigns issues to respective support team.

May 2016 - **21Lane**, Python, Qt5, FTP.

- Oct 2016
- o Peer to peer, GUI based file sharing software written in Python, Qt5 and pyftplib.
  - o Uses FTP to transfer file and data between machines.
  - o Implemented bulk file downloader by batching them using worker threads and a task-queue.
  - o Feature to search file across all machines by storing names of available files on a central hub.

## Computer skills

Data pipelines, ReSTful services, Benchmarking, Debugging

Confident Python, Golang, JavaScript, C, Bash

Intermediate C++, Java, Matlab/Octave

Tools SQL, MongoDB, Qt5, Django, Flask, Git

Platform Linux

## Positions of responsibility

Mar 2018 - **Student Gymkhana, IIIT-Allahabad.**

Present Senator to the student welfare body

July 2017 - **Nybles, Technical Newsletter of IIIT-A.**

Dec 2017 Web operations, Founding member

April 2016 - **Technical Society, IIIT-Allahabad.**

March 2017 Member, FOSS Society

## Relevant courses taken

Computer Science

- Data Structures and Algorithms
- Design and Analysis of Algorithms
- Artificial Intelligence
- Operating Systems
- Image Processing
- Data Mining
- Compiler Design
- Computer Architecture
- Computer Networking
- Database Management Systems
- Object-Oriented Programming

Mathematics

- Linear Algebra
- Convex Optimization
- Optimization Techniques