# Himanshu Shekhar

## Undergraduate | I make things

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## Education

**2015–2020**  **5 Year Dual Degree B. Tech. IT and M. Tech. Robotics**.
Indian Institute of Information Technology, Allahabad
CGPA: 8.71 (6 semesters)

**2013–2015**  **Class XII, CBSE**.
Mathematics with Computer Science
95.2%, being top 0.1% in Mathematics across country

## Experience

**May–July 2017**  **Backend Intern**, SocialCops.
- Built Collect Toolbox, a Pythonic SDK to let developers access data from underlying MongoDB.
- The toolbox provides clean object-oriented API to developers, abstracting complex cross-collection queries as well as benchmarking the expensive ones.
- Built performance report generator for the support team which sends granular report for support metrics as Excel workbook to Slack.
- The report highlighted SLAs, response-time, and other metrics product-wise as well as team-wise to show customers about our support performance and work on bottlenecks.

**Apr 2017–Apr 2018**  **Software Development Coordinator**, Technical Society, IIIT-Allahabad.
- Organized workshops, talks and mentored students to get started with software development.
- Taught primarily about Linux, Git, REST API, authentication, etc.
- Developed alumni portal for the institute to house profiles, contact information and organize events. The portal was used for first alumni meet in 2017.

## Projects

**Jan - May 2018**  **Intent based Robot Grasping**, Python, Matplotlib, PyTorch, CNN, OpenCV.
- Trained 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.

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| Dec 2015 - Present | **ProxyMan**, Bash.<br>- Lets you configure system-wide proxy settings on Linux.<br>- Written in bash and standard POSIX tools, no dependency required.<br>- Manages config for GNOME gsettings, bash, apt, dnf, git, npm and Dropbox.<br>- Appreciated by community with more than 150+ stars on GitHub and more than 2000 downloads. |
| Jan 2018 | **Dexter**, Python, JavaScript, NLP.<br>- Won 1st Prize at Hack36, annual hackathon of MNNIT-Allahabad.<br>- Voice controlled code-editor for the disabled.<br>- Voice instructions are converted to text and then converted to Python/JavaScript code using Fuzzy logic based NLP parser.<br>- Entire NLP takes place on the browser in JavaScript. |
| Oct 2017 | **Expedite**, Python, Django, MySQL, ReST API.<br>- Won first prize at IIIT-Hacks, 2017, IIIT-A's annual internal hackathon.<br>- Bridging customer issues on social media to customer support.<br>- Comments/Reviews on social page gets registered on company's CRM.<br>- Neural Network based classifier classifies and assigns issues to respective support team. |
| May 2016 - Oct 2016 | **21Lane**, Python, Qt5, FTP.<br>- Peer to peer, GUI based file sharing software written in Python, Qt5 and pyftpdlib.<br>- Uses FTP to transfer file and data between machines.<br>- Implemented bulk file downloader by batching them using worker threads and a task-queue.<br>- Feature to search file across all machines by storing names of available files on a central hub. |

## Computer skills

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| | 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

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| Mar 2018 - Present | **Student Gymkhana, IIIT-Allahabad**.<br>Senator to the student welfare body |
| July 2017 - Dec 2017 | **Nybles, Technical Newsletter of IIIT-A**.<br>Web operations, Founding member |
| April 2016 - March 2017 | **Technical Society, IIIT-Allahabad**.<br>Member, FOSS Society |

## Relevant courses taken

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| Data Structures and Algorithms | Design and Analysis of Algorithms |
| Artificial Intelligence | Operating Systems |
| Image Processing | Data Mining |
| Compiler Design | Computer Architecture |
| Computer Networks | Database Management Systems |
| Object-Oriented Programming | Optimization Techniques |
| Linear Algebra | Convex Optimization |