Sachin Singh
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Education

- **Netaji Subhas Institute of Technology** — Dwarka, Delhi
  Bachelor of Engineering in Information Technology; 7.77 CGPA agg. — *Aug. 2015 – Present*
- **Rajkiya Pratibha Vikas Vidyalaya (CBSE)** — Link Road, Delhi
  High School — *June. 2013 – July. 2015*

Experience

- **Google Summer of Code participated with P2PSP.org**
  Student Developer — *May 2018 - Present*
  - **Enhancements to P2PSP simulator**: The P2PSP is an application layer protocol for the real-time streaming of multimedia content over the Internet. Made many enhancements to p2psp simulator whose main purpose was testing and experimenting. **Inter-process communication**: Redesigned the communication mechanism by replacing UNIX sockets with Internet sockets, that enabled host to host communication by using (IP,PORT) address. **Plotting Speed**: Implemented new plotting method using PyQtGraph, earlier Matplotlib plotting method was quite slow. New plotting method was found to be about 150% more efficient.
- **EnrichAI** — Gurugram, Delhi-NCR
  Software Engineer Intern — *Dec 2017*
  - **Monitoring Systems**: Designed and implemented simulation for transformer monitoring system and developed web application for same using simulation data on Cumulocity IoT platform. Designed rating algorithm to rate the transformers. Also added functionalities to Fleet Management System.

Technical Skills

- **Languages**: Python, C/C++, Javascript
- **Libraries/Frameworks**: PyQtGraph, Matplotlib, STL, MySQL, Django, OpenCV, Numpy
- **Tools/Technologies**: WebRTC, Restful API, Websockets, Socket Programming, Git, Postman, Cumulocity IoT Plateform,

Projects

- **Talk**
  WebRTC, Websockets, Javascript, Python — *April 2018*
  - Developed a real-time peer to peer video chat application using WebRTC. WebRTC enable browser to browser communication without any server involvement in-between. Websockets were used to made signalling. Signalling were used to exchang IP addresses, codecs, file formats and other useful meta-data to initiate and maintain a call.
- **Dog vs Cat Classification Using Transfer Learning**
  Convolution Neural Network, OpenCV, Python — *Oct 2017*
  - Transfer learning is a research problem in machine learning that focuses on storing knowledge gained while solving one problem and applying it to a different but related problem. A pre-trained Convolution Neural Network model VGG-16 was used, it was fine tuned by removing last two dense layers. VGG-16 model can classify 1000 classes of objects. Accuracy of about 97% were achieved in just 6 epochs with a dataset of 10000 images
- **Automated Licence Plate Recognition**
  OpenCV, Machine Learning, OCR — *July 2017*
  - Developed a system that can automatically extract licence plate from car and recognize it's plate number. Used OpenCV to extract licence plate and machine learning algorithm, optical character recognition (OCR) to recognize plate number.