# Chetan Madan

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## Education

**Bharati Vidyapeeth's College of Engineering, Guru Gobind Singh Indraprastha University** — *New Delhi*

B.Tech., Computer Science and Engineering — *2017 - 2021*

## Experience

**Eckovation** — *New Delhi*

Subject Matter Expert - Machine Learning — *June 2019 - August 2019*

- Worked to help develop Unnayan system for smart education and classrooms
- Built an autonomous OMR sheet evaluation system without dedicated hardware

## Projects

### Few Shot Accent Sensitive Voice Cloning using Generative Decoder

Personal — *January 2020 - Present*

- Extracted embeddings corresponding to four human speech features: speaker voice features, speaker accent, emotions and context of speech using different encoder networks from mel-spectrogram of voiced audio samples
- Used VCTK, TIMIT and CMU Arctic datasets to train different encoders
- Used embeddings from the four encoders to generate mel-spectrogram corresponding to cloned voice using a generative decoder.
- Used triplet loss to train the generative decoder.

### Do It Right

Personal — *November 2018 - February 2019*

- Feedback system to detect if a user is performing a exercise properly.
- Detected keypoints on a user's body and calculated relative slopes.
- Compared relative slopes to calculate correctness of user's posture.
- Provided real-time feedback on mistakes in performance of any exercise.

### Mountain Hike

Personal — *November 2018 - Present*

- Driving assistant that gives a driver accurate picture of other cars in a radius of 200 metres
- Used the concept of indoor localization to vehicles
- Used deep neural network to suggest appropriate reaction based on surroundings of the vehicle

### Attendance System using Face Recognition

Personal — *September 2018 - December 2018*

- Implemented using Face Detection in OpenCV
- Marked the entry and exit times for every member

### Drone Surveillance System

Personal — *August 2018 - September 2018*

- Developed a system to monitor autonomous drones in real time in a region using CNN
- Aimed towards providing safety against malicious use of UAVs

### Parking Spot Detection

Personal — *June 2018 - August 2018*

- System to detect available parking spaces in parking lots as well as authorized parallel parking using existing cameras
- Major challenges were: different camera angle, position, image quality, illumination and type of occlusion

## Extracurricular Activities

### Microsoft

Microsoft Student Partner — *September 2019 - Present*

- Gained experience about new tools and frameworks for machine learning, robotics and electronics
- Held regular meetups with students to discuss and share knowledge on emerging technologies

### Developer Student Clubs by Google Developers (DSC BVP)

Head, Machine Learning *May 2019 - Present*

- Promoted technical education by taking workshops and sessions on machine learning.
- Held research discussions with students to discuss latest relevant research

### Indian Society for Technical Education

Electronika Executive *May 2018 - August 2019*

- Worked in a team to develop intelligent robotics solutions to common problems, such as guidance bot for visually impaired people

## Skills

**Programming** Python, C/C++, MATLAB, Java, Embedded C

**Deep learning** PyTorch, Tensorflow, Keras, Caffe

**Robotics** Embedded Systems, Atmel AVR, Arduino, Raspberry Pi

## Honors & Awards

2020 **Winner,** India Automation Games by **International Society of Automation (ISA) - District 14** and MPSTME *Mumbai*
Qualified for **ISA-SAIT Automation Games, Canada**

2020 **Invitee,** Microsoft **Asia Student Partner Summit** 2020 and **Imagine Cup Regional Finals**, Singapore *Singapore*

2019 **Winner,** Vihaan Hackathon by **IEEE, DTU** *Delhi*

2018-2019 **Semi Finalist,** IICDC by **Department of Science & Technology** and Texas Instruments

2018 **Winner,** UHack 3.0 Hackathon in USICT, Delhi *Delhi*