

Siddhant Bansal

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EDUCATION

Vishwakarma Government Engineering College, Ahmedabad, India

2015 - 2019

Pursuing Bachelor of Engineering in Electronics and Communication (CPI: 8.09/10)

WORK EXPERIENCE

CVIT LAB IIIT-Hyderabad

August 2019 - Present

- Working as a Research Fellow at CVIT Lab in IIIT-Hyderabad under Prof. C.V. Jawahar.

IIT Gandhinagar ([Internship Website](#))

March 2019 - August 2019

- Worked as a research intern on the project titled "Cultural Heritage Preservation and Restoration Using Digital 3D Models" under professor Shanmuganathan Raman. Project supported by IMPRINT and NVIDIA.
- Worked on 3D data acquisition, Point Cloud Registration, and Point Cloud Completion.

Meditab Software (India) Pvt. Ltd. ([Internship Website](#))

Sept 2018 - March 2019

- Research on "Facility Layout Optimization" using Genetic Algorithm, created a python environment named ELOPE (Evolutionary Layout Optimization and Evaluator) from scratch, for testing and visualizing all the evolutionary optimization algorithms.
- Created an automatic system for analyzing log files for anomaly detection in DosePacker system.

Bennett University, Greater Noida ([Internship Website](#)) ([YouTube](#))

June 2018 - July 2018

- Worked as an intern on the project entitled 'Footprint Classification'. Collected dataset of footprints from 180 volunteers, using just a simple paper scanner at 600dpi.
- Developed a custom Convolution Neural Network for classifying humans based on the shape and size of their footprints. The network was trained on the data collected earlier.

Bioscan Research, Ahmedabad

April 2018 - July 2018

- Worked as data analyst intern. Developed a GUI for keeping track of patients and the data coming from the device.
- Developed an automatic detector (using Python) for detecting actual signal (coming from a near-infrared laser scanner) amidst the noise from the brain scan.

PROJECTS

Automatic Garbage Detection and Collection

May 2018 - April 2019

- Government funded project under Student Startup and Innovation Policy (SSIP). 1% of the projects were selected.
- Designed and fabricated a robot that can collect the garbage on its own without any external help.
- Worked on an Artificial Intelligence algorithm for differentiating between garbage and useful thing. Developed an algorithm with $O(n)$ complexity for calculating the distance of the garbage from robot.

Anime Classification ([GitHub](#))

June 2018 - Aug 2018

- Trained an Autoencoder for extracting features from the image and also compressing it, then used a CNN for doing the decision making process.
- Classified 1,40,000 anime images to answer 10 different questions.

Self Driving Car ([GitHub](#)) ([YouTube](#))

June 2018 - July 2018

- Used Deep Q Learning technique for teaching a car to navigate in a given 2D environment.
- The car was able to react well when the obstacles were added after some training sessions.

Smile Detector ([GitHub](#))

June 2018 - June 2018

- Trained a CNN for detecting smiling faces in a live video using either webcam or a pre-recorded video.
- Solved the issue of imbalanced data while working on this project.

Neural Network learning to play Cart-pole ([GitHub](#))

May 2018

- Trained a Neural Network to learn how to balance an inverted pole on a moving platform.

PUBLICATIONS

- Constantin Ionescu-Tirgoviste, Alexandru Daia, Nicoleta Dragana, Siddhant Bansal, C. Vulpe, L. Guja, "Unexpected Results: Embedded Information in Fingerprints Regarding Diabetes" in 2018 ResearchGate and Academia
- Siddhant Bansal, Seema Patel, Ishita Shah, Prof. Alpesh Patel, Prof. Jagruti Makwana, and Dr. Rajesh Thakker. "AGDC: Automatic Garbage Detection and Collection." ArXiv:[1908.05849](#)

SKILLS

- Programming Languages** : Python, C++, MATLAB, HTML, CSS
- Libraries** : PyTorch, Keras, OpenCV, Numpy, Matplotlib
- Tools** : PyCharm, Git, CLion, Jupyter, Latex