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

SKILLS

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