Siddhant Bansal

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EDUCATION

Vishwakarma Government Engineering College, Ahmedabad, India **2015 - 2019**
Bachelor of Engineering in Electronics and Communication (CPI: 8.09/10)

WORK EXPERIENCE

CVIT LAB, IIIT-Hyderabad | Research Fellow | Advisor: Dr. C.V. Jawhar **August 2019 - Present**

- Optical Character Reader (OCR) for Hindi, Tamil, and Telugu
  - Accomplished improved character and word accuracy by 2.5% and 5% respectively, by using a semi-supervised training method on Convolutional Recurrent Neural Network (CRNN) with CTC Loss.
- Search Engine for National Digital Library of India (NDLI) Corpus
  - Working on creating a search engine capable of searching in Indian Languages through the NDLI corpus of 5 Lakh+ pages/language.

IIT Gandhinagar | Research Intern | Advisor: Dr Shanmuganathan Raman | Internship Website **March 2019 - August 2019**

- 3D Modelling and Geometry Processing
  - Implemented a custom autoencoder for solving the problem statement of point cloud completion (Details and results on internship webpage). Also worked on ICP and Triangulation algorithms.

Meditab Software (India) Pvt. Ltd. | Artificial Intelligence Intern | Internship Website **Sept 2018 - March 2019**

- ELOPE (Evolutionary Layout Optimization and Evaluator)
  - Successful in generating optimal facility layouts, by implementing ELOPE and using it with the Genetic Algorithm, this led to a decrease in travelling time by 75% for the DosePacker robots leading to more efficient DosePacker system.
- Automatic Log Analyzer
  - Created an automatic log file analyzer capable of predicting a possible machine breakdown, leading to a 70% decrease in maintenance time of the DosePacker system and saving on maintenance costs.

Bennett University, Greater Noida | Artificial Intelligence Research Intern | Internship Website **June 2018 - July 2018**

- Footprint Classification
  - Successful in classifying humans with up to 5 different foot sizes, by developing a custom Convolutional Neural Network trained on a dataset created with the help of 180 volunteers, using a paper scanner.

Bioscan Research, Ahmedabad | Data Analyst Intern **April 2018 - June 2018**

- Patient tracker
  - Created software capable of tracking patients using Python and SQLite, leading to better workflow for the people working on collecting the brain scans.
- Signal Extractor
  - Successful in detecting actual signal amidst noise (coming from a brain scan using a near-infrared laser scanner), by implementing an automatic signal extractor using Python.

PROJECTS

Automatic Garbage Detection and Collection **May 2018 - April 2019**

- Created a device capable of autonomously detecting and picking up the garbage by detecting waste bottle using CNN (MobileNets), developed algorithms for estimating the depth of the garbage, and estimating the path using PID.
- One of the 4% projects selected by the Government of India under Student Startup and Innovation Policy (SSIP) for funding and demonstration at the SSIP annual conference.

Anime Classification | GitHub **June 2018 - Aug 2018**

- Worked on autoencoders to learn the features from 1,40,000 images. Then using the trained autoencoder with added convolution layers to classify the anime to answer various questions.

Self Driving Car | GitHub | YouTube **June 2018 - July 2018**

- Learned about Deep Q Learning by implementing it for driving a car autonomously.

Smile Detector | GitHub **June 2018 - June 2018**

- Created an end-to-end system for detecting smiling faces in a live video stream using Convolutional Neural Network.

PUBLICATIONS

- 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