

# Prabh Simran Singh Baweja

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## EDUCATION

### CARNEGIE MELLON UNIVERSITY

#### MASTERS IN ELECTRICAL AND COMPUTER ENGINEERING

Aug 2019 - Present

### IIIT HYDERABAD

#### BACHELORS OF TECHNOLOGY IN COMPUTER SCIENCE

2012 - 2016

Dean's Merit List (Fifth Semester)

## LINKS

Website: <https://prabh27.github.io>

Github:// [prabh27](#)

LinkedIn:// [prabhbaweja](#)

## ACHIEVEMENTS

- 2019: Technical Talk on Intelligent Stock Market Gamification Models at CMU Tech Summit, Bangkok.
- 2018: **Technical Talk on Chatbots in the Travel Industry** at PyCon Poland, and FullStack Fest Barcelona.
- 2016: Award of Honor from the Chief Minister of Himachal Pradesh, India.

## COURSEWORK

- Research and Innovation
- Convolutional Neural Networks
- Deep Learning
- Machine Learning
- Computer Systems
- Data Structures

## SKILLS

### Programming Languages

C++ • Java • Python

### Tools/Libraries

Numpy • Pandas • Git • FastAI

Docker •  $\text{\LaTeX}$  • Tensorflow

### Others

HTML/CSS • MySQL

## RESEARCH

### INVENTORY FLOW | RESEARCH ASSISTANT

Aug 2019 - Present

Online Learning, Cross Training

- Advised by Dr. Pei Zhang (CMU), and Dr. Hae Young Noh (Stanford).
- Created sythetic datasets for generalization and auto-annotation.
- Developed models based on FasterRCNN architecture for pallet detection, a tracker using Simple Online and Realtime Tracking (SORT), and a model to count the pallets using the geofencing at each warehouse.
- **Achieve 90% daily accuracy at two warehouses. The system is currently being deployed at 20 warehouses.**

### SKYGLOW | RESEARCH ASSISTANT

May 2020 - Aug 2020

Image Processing, Map Projection

- Advised by Professor Diane Turnshek (CMU), Professor Chris Kyba (GFZ).
- Developed an algorithm to define a cloud mask on visible band nighttime imagery from space by the Luojia-1 satellite.

### INTELLIGENT STOCK MARKET | ML ENGINEER

Aug 2019 - Dec 2019

Personalized Learning, Gamification

- Integrated Gamification with Personalized Learning Experience Engine composed of Feature Selection and Investor Classification techniques.
- **Presented a Poster at CMU Tech Summit, Bangkok.**

## EXPERIENCE

### AIFI | RESEARCH INTERN

Aug 2020 - Present | Remote

Vision Product Prediction

- Working on vision model accuracy improvement.
- Pipelining end-to-end ML workflows for rapid and reliable experimentation.

### BOOKING.COM | SOFTWARE DEVELOPER

Jun 2017 - Aug 2019 | Amsterdam

Contextual Linguistic Analysis

- Developed a Contextual Linguistic Analysis model to provide semantic context for the for Booking.com Chatbot.
- Gave a **technical talk on chatbots in the Travel Industry** at Poland, Barcelona.

### CODENATION | SOFTWARE DEVELOPER

Jun 2016 - Apr 2017 | Bangalore, India

Code Analysis

- Implemented an automated refactoring system that modularizes 30-40% of duplicate code cases - a 7-fold improvement from state of the art.
- **The patent is currently under review.**

## ACADEMIC PROJECTS

- **Decision Trees:** Implemented a Decision Tree from scratch using Python.
- **Logistic Regression:** Implemented Logistic Regression from scratch using Python.
- **Proxy server:** Implemented an HTTP proxy server to serve multiple HTTP GET requests from clients concurrently using threads in C.
- **Malloc allocator:** Developed a heap allocator in C using segregated lists of free blocks together with least internal fragmentation.