

# ISHAN BHATT

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## EDUCATION

### Department of Computer Science, North Carolina State University

January 2021 – December 2022

Master of Science (Computer Science)

Raleigh, North Carolina, United States

Grade Point Average (current): 4.0+ on a 4-point scale | Full tuition waiver (Graduate Student Support Plan -GSSP) | Phi Kappa Phi

### Birla Vishvakarma Mahavidyalaya, Gujarat Technological University

August 2015 – June 2019

Bachelor of Technology (Computer Engineering)

Vallabh Vidyanagar, Gujarat, India

Cumulative Performance Index: 9.29 on a 10-point scale | **GATE (Computer Science): All India Rank – 1357** out of 99932 candidates

## EXPERIENCE

### Walmart Global Tech - eCommerce (AI End-to-End : Imagery & Rich Media)

Summer 2022

Senior Data Scientist (Intern)

Bay Area, CA, United States

- Worked on design, development and deployment of a project to improve the aesthetic appeal of images associated with Apparel products.
- ✓ Project had a positive impact on 44% (1Bn items) of products under the category: "Clothing, Shoes & Accessories"

### North Carolina State University - PICTURE Research

June 2021 – December 2022

Graduate Research Assistant

Raleigh, NC, United States

- Using ML and hypotheses around **Tropical Cyclogenesis** to achieve reliable Pre-season Hurricane Prediction
- Built a web platform for visualizing electric power usage data; Currently developing ML techniques for day-ahead Net-load forecasting
- Developing an AI basketball coaching system that takes readings from sensors attached to a player's arm and provides posture feedback

### Tata Consultancy Services Limited - Research & Innovation (Manufacturing)

January 2019 – December 2020

Project Intern & (later) Systems Engineer - AI/ML

Mumbai, MH, India

- Built ML-powered Fault Detection Systems for Car Seats, Jet Engines (Vibration Detection using sound), Metal Welds (Visual Weld Strength Analysis), PCBs (Detect missing components from images), etc.; Integrated these with TCS's **Visual Cognitive Quality Assurance suite**
- ✓ Was usually responsible for proposing a new idea and deploying a PoC/Pilot application; Completed over ten assignments in a year

## TECHNICAL SKILLS

\* indicates working-knowledge

**Programming:** Python 3, C++/C, JavaScript, Java\*

**Machine Learning:** NumPy, pandas, scikit-learn, OpenCV, NLTK

**Deep Learning:** TensorFlow(1.x) + Keras, PyTorch\*

**Visualization:** matplotlib, Seaborn, D3JS, tableau, dash.plotly

**Web front-end:** HTML 5, CSS 3, Bootstrap, JavaScript, ReactJS\*

**Web back-end:** Python Flask, NodeJS, PHP, SQL

**Internet of Things:** Arduino, Raspberry Pi

**Cloud/DevOps\*:** git, AWS, GCP, Docker

## PROJECTS

### Terrain Recognition | Deep Learning - Time Series Analysis

- Built an Ensemble of **ID-Auto-encoders** and **Bi-LSTMs** to perform **Sequence-to-Sequence Classification** for continuous terrain prediction using data stream from sensors (accelerometers and gyroscopes) attached to a person's prosthetic lower limb
- ✓ Achieved 93.5% weighted-mean F1-Score on the private leaderboard; Stood 1<sup>st</sup> (among ≈ 120 participants) in the competition

### Human Pose Estimation (HPE) | Deep Learning - Computer Vision

- Built an HPE system taking inspiration from **CPMs** & **SHMs**; Achieved 82% PCKh@0.5 which is 10% less than **State-of-the-Art**

### LAMP-stack website | Web Development

- Proposed, developed and maintained a website for the National Cadet Corps unit hosted on college campus from 2018 to 2020
- ✓ Was awarded NCC Certificate of Excellence for this work; Currently, NIC-India hosts a **modified version**

### Maze Exploration and Navigation | Reinforcement Learning; IoT

- Trained an RL agent using Deep-Q-learning and Policy Gradient methods to navigate through an uncharted region on-the-fly
- Built a Raspberry Pi powered pilot-vehicle with **LiDAR** (for location tracking & obstacle detection) that could navigate in sparse mazes

## LEADERSHIP / EXTRACURRICULAR

### Students' Core Committee (SCC), BVM Engineering College

Member & Computer Engineering Branch Co-head

- SCC organizes BVM's annual techno-cultural festival **UDAAN**; 5000+ participants from across the state are hosted on the BVM campus
- ✓ Was directly responsible for conducting 4 events with ≈ 1000 participants; Received Spirit of Udaan award for exceptional contribution

### National Cadet Corps (NCC), 2 Composite Technical Company (NCC)

Cadet & (later) Under Officer

- ✓ Was directly responsible for ensuring proper training of ≈ 60 cadets; Proposed, developed and maintained a website for the unit
- ✓ Received NCC Certificate of Excellence; Received NCC Officers' Training Academy (Kamptee) Certificate of Merit, etc.

## Writing

- ✓ Writer for Analytics Vidhya's Online Publication; 100+ hours of total read time on my **Medium** blogs related to Machine Learning
- ✓ Active Writer on **Quora** since 2015; ≈75K lifetime views on my answers to questions related to various topics in Computer Science
- ✓ Contributed to most major campus periodicals at BVM; 4 of my **non-technical articles** were featured in various campus publications