

ISHAN BHATT

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☎ 984-233-8019 ✉ ivbhatt@outlook.com www.linkedin.com/in/ivbhatt github.com/ivbhatt ivbhatt.com

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): 4.28 on a 4-point scale

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

PICTure Research Group, North Carolina State University

June 2021 – December 2022

Graduate Research Assistant

Raleigh, North Carolina, 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 – August 2020

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

Mumbai, Maharashtra, 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 1D-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 leader-board; Stood 1st (among ≈ 120 participants) in the competition

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

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

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

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