DHRUV JAIN

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AI Technophile, EE Senior with passion for Coding

EDUCATION

Indian Institute of Technology, Dharwad (IITDH) *2018 – Present (SEM 7)*
Bachelor of Technology in Department of Electrical Engineering. CGPA: 8.77/10

TECHNICAL STRENGTHS

Programming Languages: Python2/3, MATLAB, PHP, GIT, C/C++, Java, MySQL, HTML, CSS, Shell, LaTeX, JavaScript, AJAX, Visual Basics, Docker.

Modeling and Analysis: Artificial Intelligence: ML/DL, OpenCV, Speech Language Processing, Cloud Hosting and Management: AWS/GCP/AZURE/Shared-Hosting, Google Colab, Flask, Laragon, GitHub, VS Code, Linux, MS Office.

WORK EXPERIENCE

BHARAT ELECTRONICS LIMITED (BEL) and IITDH (May 2021 - August 2021)
Data Scientist Intern

· Online Multi-Target Tracking Using Recurrent Neural Networks. The task was to achieve better accuracy than the existing state-of-the-art, the Interacting Multiple Model (IMM) filter, alongside providing probabilistic predictions and smoothing the objects' trajectories in radar vicinity using DL techniques.

Milestone Business Ventures LLP (MBVL), Mumbai (May 2019 - August 2019)
Backend Developer and Data Analyst Intern

· This internship helped me develop my technical skills and helped me understand various non-technical aspects such as quantity estimation, labor management, and safety precautions. Also, developed and hosted a showcase website for this manufacturer to display its products online.

RESEARCH AND DEVELOPMENT

Deep Learning based Radar Multi Target Tracking (August 2021 - ONGOING)

· Outperformed the existing state of the art, Interacting Multiple Model (IMM) filter by deep-learning techniques, in-order to predict, associate, and smoothen out the objects' trajectories in radar vicinity, with a sound accuracy.

PROJECTS

Real-Time Speech Recognition System, IITDH (August 2021 - ONGOING) (Link to Code).
Software Programmer and AI Developer
Implemented real-time end-to-end speech recognition system on hardware. Alongside integrating a microphone, ADC and FPGA, and speakers through few pre-trained TCN/TDNN deep learning models.

Bosch Traffic Sign Recognition, IITG (February 2021 - March 2021) (Link to Code).
Data Scientist and Advisory Role
A step closer to L5 autonomy, we tried to solve a challenging problem that will help a vehicle make its own decisions by recognizing the traffic signals on the road, using BOSCH's dataset on Resnet models.

Smart India Hackathon, Kerala (June 2020 - August 2020) (Link to Code).
AI Model Developer and Data Engineer
Developed an Asset Performance Monitoring platform based on ML algorithms to calculate the maximum real-time reliability and efficiency of the process plant equipment such as motors for the company GAIL.

Real-Time Face Recognition - Microprocessor, IITDH (March 2018 - April 2018) (Link to Code).
Software Engineer and Communication Manager
Building a Face-Detection Door Unlock system. Implemented various aspects such as face detection using pre-trained haar-cascades, image processing using OpenCV. Learned to work with raspberry-pi devices.

Minor/Course Projects

Machine Learning IPL 2020 Winner Predictor (Link to Code).
ML model to predict the winner of IPL 2020, using Kaggle data of 2009-2020 matches (80%+ Accuracy).

Chess Keywords Voice Detection (Link to Code).
Understand spoken chess commands by converting into chess notation to make a move in the Chess GUI.

Generating images using CNN and Autoencoders (Link to Code).
Denoise the images and generating a new clean sample of the images for further prediction process.

Visualizing optimization algorithms and their convexity (Link to Code).
Checking for convexity of fn.'s by visualizing them in 3D interactive plots; for solving convex problems.

Interactive tool to monitor motors efficiency (Link to Code).
APM UI to calculate efficiency of Motors using an ML, even provides suggestions to increase reliability.

Website Development (Link to Code).
Project of building and hosting an interactive and responsive website to displays products for a company.

Machine Learning Image Classifier (Link to Code).
Building a CNN to predict digits using the Kaggle MNIST dataset TensorFlow in python.

Data Filtering and Data Visualization (Link to Code).
Transforming and understanding relations in data using Heat-maps, visualizing tool of python-cufflinks.

Image Processing and Object Detection using Deep Learning Techniques (Link to Code).
Adding: text, line, shapes, objects in images. Identifying face and eyes using haar-cascades.

Maze Solver Bot (Link to Code).
Using Arduino with ultra-sonic sensors to help bot to escape a maze, using right side wall technique.

Relevant Courses Completed

- Data structures and Algorithms
- Programming Techniques
- Pattern Recognition and Machine Learning
- Neural Networks and Deep Learning
- Speech Processing
- Optimization Theory and Algorithms
- Information Theory
- Computer Architecture
- Data Analysis
- Computer Programming
- Introduction to High Performance Computing
- Calculus and Linear Algebra
- Introduction to Probability
- Introduction to Communication Systems
- Digital Signal Processing
- Digital Systems

ACADEMIC ACHIEVEMENTS

- Participated in 9th Inter IIT Tech Meet, IITG (2021).
- Runners up in Machine learning Competition organized by Smart India Hackathon (2020).
- Won Coding Competition in Indian Institute of Information Technology, Dharwad (2019).
- Secured AIR 7514 in JEE Advanced among 2,000,000 students in open general category (2018).
- Runners up in Game-Making Competition organized by Game Jam Titans (2016).
- Secured 93.17% in 10^{th} and 83.69% in 12^{th} board examinations, respectively.

PERSONAL TRAITS

- I can understand five languages: English, Hindi, Marwari, Gujrati, Marathi.
- Member of: Department Academic Mentorship Program Team, AI Club, Quiz Club, Tech Team, HPC Team.
- Twenty-one years young CS Enthusiast that has the ability to work as an individual as well as in a group.
- Believes in Openness, Conscientiousness, Extraversion, Autodidacticism and Agreeableness.
- Strong motivational, management, and leadership skills in any assigned task.
- Interested in Sports: Cricket, Football, Badminton, Basketball, Swimming, Athletics, Chess and many more.
- Keen interest in topics such as Gravity, Black Hole, Quantum Physics, Cosmos, Mythology.
- Taking various courses on Coursera and Udemy Platform regarding AI, Python, Web Development.
  - Introduction to HTML5
  - Building Web Applications in PHP
  - Introduction to Structured Query Language
  - Building Database Applications in PHP
  - JavaScript, jQuery, and JSON
  - Machine Learning A-Z™
  - Deep Learning A-Z™
  - Python for Data Science Bootcamp
  - Git Beginner
  - Python Django 2021