Abhishek Rajesh Saste

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EDUCATION:

- **MSc. Communications and Signal Processing:** Newcastle University, Sep 2021 - Sep 2022.
  - **Subjects covered in the course:**
    Image Processing and Computer Vision, Intelligent Signal Processing, IoT and Wireless Sensors, Information Theory and Coding, Communications and Signal Processing, and Wired and Wireless Communication.
- **B.E in Electronics and Telecommunication**, Ram Rao Adik Institute of Technology, Navi Mumbai, Jun 2016 - Nov 2019.
- **Diploma in Electronics and Telecommunication**, Vidyalankar Polytechnic, Wadala
  Jul 2013 - May 2016.

EXPERIENCE:

- **iNeuron Pvt. Ltd, October 2022 – Present, Job Role**: Machine-learning Intern (Remote Certified Internship).

Project Approach: Using the available factors present in the dataset and performing classical machine learning tasks like,

1. Data Exploration and Visualization using, Pandas and Matplotlib.
2. Preparing datasets for machine learning applications, performing data analysis, pre-processing, and feature engineering.
3. Data Cleaning, Data manipulation and Analysis using tools like Pandas and NumPy.
4. Trying out different machine learning algorithms that best fit the given case using Grid search cross-validation and assisting in evaluating AI models' performance and suggesting improvements and optimizations.
5. Scikit-learn or Keras for model building and improving the accuracies for the same.
6. Using Different IDEs to build projects and contribute to developing AI-powered applications and tools by writing clean and efficient code.
7. Creating a UI using Python FLASK and deploying it on AWS, Azure, or Google Cloud platforms.

- **Doordarshan Kendra, Nov 2019 - Dec 2020, Job Role:** Graduate Apprentice.
  1. Gained experience in a variety of specialism including electronics and communications.
  2. Maintained quality system compliance by assisting in internal and external test equipment calibration.
  3. Experienced in Earth stations, including handling high-power transmitters.
  4. Undertook Technical operations and maintenance of audio and video equipment.
  5. Investigated equipment failures to diagnose faulty operations and provided support with software and hardware upgrades.
  6. Increased problem-solving skills to deal with the fault in a particular system.

SKILLS:

- **Programming Languages, Databases and Scripting Languages:** Python, C++, MySQL, HTML, CSS, JavaScript.
- **AI/ML Frameworks and Libraries**: Keras, TensorFlow, PyTorch, Pandas, Numpy, Scikit- learn, Open CV, Tableau, Power BI, and Linux.

- **Software:** Jupyter Notebook, GitHub, Docker, PyCharm, Apache Spark, Excel.
- **Cloud Platform:** AWS EC2 instance, AWS SageMaker, Microsoft Azure Machine Learning, Google Cloud AI Platform.
- **Mathematics**: A good understanding of Linear Algebra, Calculus, Probability, and Statistics and the foundational mathematical concepts that are used in Machine learning and Deep learning algorithms.
- **Machine Learning Algorithms**: Linear Regression, Logistic Regression, Decision Trees, Random Forest, Support Vector Machines, Naive Bayes, K-Nearest Neighbours, Neural Networks, Gradient Boosting, Clustering, AutoML, and Transfer Learning.
- **Deep Learning Algorithms:** Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Reinforcement Learning.
- **Computer Vision Algorithms:** Object Detection, Image Segmentation, Face Recognition, Image Classification, and Object Tracking.
- **Natural Language Processing Algorithms:** Text Classification, Sentiment Analysis.
- **Signal Processing Algorithms:** Fourier Transform, Wavelet Transform, Digital Filtering, Time-Frequency Analysis, Principal Component Analysis (PCA), Adaptive Filtering, and Time-Series Analysis.
- **Personal skills:** Strong analytical and problem-solving skills, excellent communication and interpersonal skills, quick learner, Passion for learning new technologies and staying up-to-date with industry trends.

PROJECTS:

- **MSc Project and the challenges undertaken:** Tuberculosis, Pneumonia, and Healthy and Infected lung detection using Convolutional Neural Networks: VGG16, VGG19, and ResNet50.
  1. Pneumonia detection using VGG16, VGG19, and ResNet-50 using Transfer Learning.
  2. Tuberculosis detection using VGG16, VGG19, and ResNet-50 without using transfer learning.
  3. Classifying Healthy, Pneumonia, or Tuberculosis X-Ray from the best model.
  4. Executing predictions on individual models for their designated functions
  5. To analyze the variability in the training and testing accuracies of all the mentioned models on different train-test split ratios trained on different numbers of epochs.

  Skills and Tools used:
  Data Visualization, Data Preparation, Model building and Evaluation, Open CV, Python, Numpy, Pandas, Tensorflow, Scikit-learn.

- **Personal Project:** House Price Prediction, Campus Placements, Flight Fare Predictions.
  1. Programming language used, Python.
  2. Employed Numpy and Pandas functions for data filtering and transformation.
  3. Leveraged Matplotlib modules for data visualization and representation.
  4. Applied Sklearn methods for model selection and tuning.
  5. Jupyter notebook, visual studio code and pycharm as IDE.
  6. Used Python Flask as an HTTP host and HTML/CSS/JavaScript for front-end layout.
  7. Deployed models on AWS EC2 instances and the Heroku platform.

CERTIFICATIONS:

- Advance your skills as a Machine Learning Specialist. (LinkedIn).
- Campus Placement (Internship Experience Letter).
- Telecom transmission technologies, Satellite Communication, and OFC, BSNL, India.

AREAS OF INTEREST:

Artificial Intelligence, Machine Learning, Deep Learning, Signal Processing, Data Engineering.