

DEBOJYOTI CHATTORAJ

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CAREER OBJECTIVE:

Aspiring Data Scientist, Data Analyst and Machine Learning Engineer leveraging 2+ years of hands-on experience in model development, deployment, and full-stack integration. Eager to apply deep learning, data engineering, and cloud-native MLOps practices to drive actionable insights in pharmaceutical and life-science domains.

PROFESSIONAL SUMMARY:

Multidisciplinary AI/ML professional skilled in designing, training, and optimizing supervised and unsupervised models using TensorFlow, Keras, Scikit-Learn, and OpenCV. Proficient in data preprocessing, feature engineering, and hyperparameter tuning to achieve 85%+ validation accuracy on complex classification tasks. Experienced in containerized deployments with Docker, Flask-based REST APIs, and Google Cloud Platform. Strong background in pharmaceutical R&D ensures data integrity and compliance throughout the ML lifecycle.

CORE COMPETENCIES:

Python | SQL | Supervised & Unsupervised Learning | Deep Learning (CNN, RNN) | Transfer Learning | Computer Vision & OpenCV | Data Wrangling (Pandas, NumPy) | Model Deployment & Monitoring | Hyperparameter Tuning | Flask API Development | Docker & Kubernetes Basics | Frontend Development (HTML, CSS & Bootstrap) | Data Visualization (Matplotlib, PowerBI) | Google Cloud Platform (Compute Engine, Storage) | PostgreSQL | Anaconda | Jupyter Lab | Data Analysis (PowerBI) | Excel (Lookup, VBA, Macros) | ISO Standards Implementation | Computerized System Validation | SDLC | Scrum | Agile, Waterfall & V methodology | CI/CD for ML (Git, GitHub Actions) | Six Sigma Green Belt | Version Control (Git)

- Comprehensive understanding of supervised, unsupervised, and reinforcement learning algorithms, including regression, decision trees, clustering, and deep neural networks.
- Knowledge of model evaluation metrics and validation techniques such as cross-validation, confusion matrix analysis, ROC-AUC, precision, recall, and F1-score.
- Core proficiency in data preprocessing and feature engineering, including handling missing values, encoding categorical variables, normalization, and dimensionality reduction (PCA, t-SNE).
- Skilled in Hyperparameter tuning strategies (grid search, random search, Bayesian optimization) to enhance model performance and prevent overfitting.
- Proficient in designing and training deep learning architectures (CNNs, RNNs, Transformers) using TensorFlow, Keras.
- Experienced in computer vision tasks—image classification, object detection, and segmentation—leveraging OpenCV and convolutional neural networks.
- Adept at deploying machine learning models as RESTful services with Flask or FastAPI and containerizing applications using Docker for scalable production environments.
- Implemented MLOps pipelines with CI/CD workflows via GitHub Actions, experiment tracking using MLflow, and model/version control with DVC.
- Familiar with cloud-based ML workflows on GCP (AI Platform), enabling scalable training, serving, and monitoring.
- Skilled in monitoring and maintaining models post-deployment with Prometheus, Grafana, or built-in cloud monitoring to detect drift and performance degradation.

ORGANIZATIONAL EXPERIENCES:

- 1. Thermo Fisher Scientific India Pvt. Ltd, Bangalore**
Designation: Technical Application Specialist (From 6th July 2023 to Present)
- 2. Spinco Biotech Pvt. Ltd. (Shimadzu Asia Pacific)**
Designation: Executive Application Support (From 1st Sep 2022 to 1st July 2023)
- 3. Wipro Limited, Bangalore**
Designation: Scientist (From 1st Jul 2021 to 30th Aug 2022)
- 4. Edward Food Research and Analysis Centre Pvt. Ltd., Kolkata**
Designation: Jr. Chemist (From 1st October 2019 to 30th June 2021)
- 5. Alkem Laboratories Pvt. Ltd., Sikkim**
Designation: QC Officer (From 2nd August 2018 to 15th September 2019)

SELECTED PROJECTS:

1. Flower Image Classification

The classification of flowers based on their images is a practical and visually appealing application of deep learning in the domain of computer vision. This project presents the development of a flower identification system using a pre-trained ResNet50 convolutional neural network model, fine-tuned on a flower dataset.

- Used Deep Learning and Transfer Learning. Fine-tuned a ResNet50 model (ImageNet-pretrained) for the Oxford 102 Flower Dataset with custom top-layers, batch normalization, dropout, and ReduceLROnPlateau callbacks. Incorporated TensorFlow Keras data pipelines and on-the-fly augmentations (random flips, rotations) to boost generalization.
- Integrated two classification models—a large ResNet50-based network for accuracy (102 classes) and a lightweight custom CNN for speed (5 classes). Enabled users to select their preferred model via a dropdown for interactive performance comparison.
- Built a responsive UI with HTML/CSS, Bootstrap, and JavaScript. Implemented / and /predict routes to handle image uploads, preprocessing (256×256 resizing), model inference, and dynamic display of predictions, confidence scores, and image previews.
- Dockerized the entire stack (Python 3.12, dependencies, models, static assets) and deployed to Google Cloud Run via Cloud Build. Achieved serverless, globally accessible, and auto-scaling inference with seamless CI/CD integration.
- For more details, please visit 'My Portfolio' section of <https://portfolioofdebojyoti.in>.

2. Cricket Data Analysis

This involved collecting and analysing T20 cricket data from ESPNcricinfo to identify the best eleven players across all teams to form an ultimate squad by analysing various key factors.

- Collected data from www.espnricinfo.com in JSON format using web scraping.
- Used Python Pandas read the JSON file containing the data and performed data cleaning and data transformation.
- Then used PowerBI for Data Modelling and Visualization.
- For more details, please visit 'My Portfolio' section of <https://portfolioofdebojyoti.in>.

3. Blog Website

Developed a full-stack blogging platform enabling users to create, edit, and comment on posts, with role-based access controls and input validation.

- Crafted a responsive, mobile-first UI using Bootstrap, ensuring consistent typography, grid layouts, and component styling across devices.
- Engineered a RESTful backend with Python Flask, structuring modular Blueprints for authentication, content management, and API endpoints.
- Deployed the application to an Oracle Cloud VPS (Ubuntu), leveraging Caddy as a secure reverse proxy (HTTPS/TLS) and Gunicorn as the WSGI server for scalable request handling.
- For more details, please visit 'My Portfolio' section of <https://portfolioofdebojyoti.in>.

EDUCATIONAL QUALIFICATIONS:

- **Bachelor of Pharmacy (B. Pharm)** – Maulana Abul Kalam Azad University of Technology (2014-18) | YGPA: 7.94
- **Higher Secondary (Class 12)** – Saidabad Manindra Chandra Vidhyapith | WBCHSE (2013) | 69.20%
- **Secondary (Class 10)** – Saidabad Manindra Chandra Vidhyapith | WBBSE (2011) | 82.50%

TECHNICAL SKILLS:

1. Defect Management Tools (JIRA & Azure DevOps)
2. Languages & Frameworks: Python, SQL, TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy, Matplotlib
3. Web & API: Flask, HTML5, CSS3, Bootstrap
4. Databases & Storage: PostgreSQL, MySQL, SQLite
5. DevOps & Cloud: Docker, Google Cloud Platform
6. Virtualization Tools (Hyper-V & Azure DevTestLab)
7. Operating System (Linux, Windows, Windows server 2019/2022)
8. Tools & IDEs: Jupyter Lab, Anaconda, VS Code
9. Structured Query Language (SQL)
10. Visualization & Reporting: PowerBI, MS Office

CERTIFICATIONS:

- 100 Days of Code – The Complete Python Pro Bootcamp from Udemy
- SQL Essential Training from NASBA
- Python Basics from HackerRank
- SQL Basics from HackerRank
- Certification course on Lean Six Sigma Green Belt Certification (IASSC) from Simplilearn.
- Certification course on Agile Scrum Foundation from Simplilearn.
- Certification course on Agile Methodology from GreatLearning.
- Certification course on ISO 9001:2015, ISO/IEC 27001, ISO 13485:2016, ISO 14001:2015 from Alison.

PROFESSIONAL STRENGTH:

Team Player | Time Management | Motivator | Go-getter