Dharambir Singh Sidhu

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TECHNICAL SKILLS

Skills: Java, Python, Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, SQL, MySQL, Machine Learning, Predictive Modeling, Data Analytics, Data Science

Tools & Platforms: Jupyter Notebook, Google Colab, GitHub, Kaggle

TECHNICAL PROJECTS

Detecting Deception | *Python, TensorFlow, OpenCV, DenseNet121, Entropy Analysis*
- Developed and deployed a Hybrid Deepfake Detection Model, integrating **DenseNet121 CNN** with novel **entropy-based randomness** analysis for robust feature extraction.
- Achieved 99.41% accuracy in deepfake detection, outperforming baseline CNNs by 1.91% on a 140K-image dataset.
- Engineered a hybrid model using TensorFlow/OpenCV, fusing DenseNet-121's spatial features with entropy via SE attention, enhancing reliability and reducing false positives.
- Achieved substantial error reduction, **lowering FDR by 71%** and **misclassification rate by 79.9%** using hybrid techniques.

Krishniti AI | *Python, Scikit-learn, SQLite*
- Spearheaded a multi-agent AI platform transforming Indian agriculture by unifying fragmented data, combating climate uncertainty, and driving sustainable, profitable farming.
- Engineered a modular 6-agent **OOP architecture**, integrating environmental, crop, market, and sustainability insights.
- Designed and implemented a centralized, **ACID**-compliant SQLite database for inter-agent communication.
- Created a data-driven "Green Score" system, providing real-time eco-impact insights to promote responsible farming.
- Integrated a pretrained **Hindi Voice Assistant**, boosting platform accessibility and engagement for rural users.
- Planned integration with **Urban Food Desert** Detection system to optimize direct farm-to-consumer sales, increasing profits.

MindGuard AI | *Python, NLP, SHAP, Machine Learning*
- Engineered an AI-powered mental health monitoring system leveraging multi-modal data for early crisis detection and proactive intervention.
- Processed diverse datasets, including text sentiment **(NLP)**, behavioral metrics (sleep, activity, stress), and clinical assessment scores **(DASS-21, BDI, BAI)**, for comprehensive user profiling.
- Implemented Explainable AI **(SHAP)** for transparent risk predictions, enabling actionable intervention strategies for users.
- Automated crisis alerts to emergency contacts based on risk thresholds for timely intervention in critical situations.
- Planned future integration with social media APIs (e.g., X/Twitter) to leverage real-time behavioral insights for proactive, pre-symptomatic mental health crisis prevention.

CERTIFICATIONS

Data Analysis with Python — *IBM - Coursera*	June 2025
Databases and SQL for Data Science with Python — *IBM - Coursera*	June 2025
Problem Solvers- Mastering Data Structures and Algorithms — *FACE Prep*	April 2025

EDUCATION

VIT Bhopal University	2022 – 2026
B.Tech. in Computer Science and Engineering	*CGPA: 9.05 / 10*
Delhi Public School	2022
Class XII (CBSE)	*Percentage: 95.2%*
Euro International School	2020
Class X (CBSE)	*Percentage: 93.8%*

ACHIEVEMENTS

- CodeClash – IEEE TEMS, VIT Vellore: Ranked among the top 10 participants (out of 800+) in a competitive coding challenge, demonstrating advanced algorithmic problem-solving.
- Zelestra X AWS ML Ascend Challenge - 2nd Edition: Ranked top 5% showcasing strong machine learning and EDA skills.

EXTRACURRICULAR ACTIVITIES

- Pledge a Smile Foundation Volunteer: Actively engaged in fundraising efforts, generating resources for critical initiatives spanning hunger relief, education, and social justice.