JAY AGRAWAL

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SUMMARY

AI/ML Engineer with hands-on experience in machine learning, deep learning, and computer vision. Completed a one-year research project on AI-assisted design in nanophotonics, where I used neural networks and optimization algorithms to solve an inverse design problem. Skilled in Python, TensorFlow, and data handling. Looking for a full-time role to apply my skills in solving real-world problems using AI.

EDUCATION

Master of Technology, Artificial Intelligence — June 2025
Pandit Deendayal Energy University, Gandhinagar — 8.32 CGPA
Relevant coursework: Neural Networks, Pattern Recognition & Machine learning,
Essential Math in AI, Open CV, Time Series Data Analysis, AI in Finance

Bachelor of Engineering, Computer Engineering — July 2023
Sal Engineering and Technical Institute, GTU — 7.59 CGPA

TECHNICAL SKILLS

– **Languages/Tools:** Python, Jupyter Notebook, Git/GitHub

– **ML/DL Frameworks:** TensorFlow, Keras, Scikit-learn, XGBoost

– **Computer Vision:** OpenCV, Transfer Learning, InceptionV3

– **Data Handling:** Pandas, NumPy, Matplotlib, Seaborn

– **Optimization:** Differential Evolution, Model Evaluation (MSE, R^2, accuracy)

PROFESSIONAL EXPERIENCE

Maxgen Technologies Pvt. Ltd.: Machine learning Intern — Feb 2023 – Apr 2023

– Gained proficiency with Python libraries and tools such as TensorFlow, Keras, Scikit-learn, and Pandas.

– *Internship Project: Skin Disease Detection*

– Technology used: Python, TensorFlow, Keras, OpenCV, NumPy, Pandas, Jupyter Notebook, Google Colab.

BrainyBeam Technologies Pvt. Ltd.: Internship in Data Science and Machine learning — Jun 2022 – Jul 2022

– *Internship Project: Recommendation system using Sentiment Analysis*

– Technology used: Data preprocessing, NLP, Jupyter Notebook, Python, Kaggle

ACADEMIC PROJECTS

Fruit Classification (Fresh vs Rotten)

– Collected and preprocessed image dataset of fresh and rotten fruits

– Applied data augmentation techniques to increase training data variety

– Used InceptionV3 with transfer learning to build an image classifier

– Achieved 97% classification accuracy on validation data

– Technology Used: Python, TensorFlow, Keras, OpenCV, NumPy, Google Colab, Pandas

House Price Prediction

– Performed exploratory data analysis and cleaned raw housing data

– Engineered features and applied various regression models

– Used XGBoost for final model with optimized hyperparameters

– Achieved R^2 score of 0.82 on the test dataset

– Technology Used: Python, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, Jupyter Notebook

OTHER WORK EXPERIENCE

Pandit Deendayal Energy University (Research and Teaching Assistant)

– Assisted lab sessions for AI/ML subjects

– Helped students with coding and project guidance

– Supported professors with grading and project mentoring

RESEARCH EXPERIENCE AND PUBLICATIONS

AI-Assisted Design Discovery in Nanophotonics – PDEU   July 2024 – May 2025

– Solved an inverse design problem using Deep Neural Networks and Differential Evolution to optimize 8-layer DBR structures (Sb_2S_3/SiO_2)

– Replaced traditional simulation (15 minutes per run) with a DNN-based surrogate model that predicts spectral response in milliseconds.

– Reduced total optimization time from weeks to minutes, enabling faster and scalable nanophotonic device design.

– Output: 244-dimensional spectral response (reflectance/transmittance in amorphous and crystalline phases)

ETOT – I Conference, Andhra Pradesh   January 2025

– Presented our work as a poster at the conference

Upcoming Conference Submission   Expected November 2025

– Manuscript already written and will be submitted soon

Journal Paper Preparation   Ongoing

– Manuscript under preparation for journal submission