Dilshad Raza

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Education

Indian Institute of Technology (ISM) Dhanbad *Expected Graduation: 2028*
Integrated Master of Technology in Mathematics and Computing
CGPA: 8.77/10

Projects

ISIC Skin Cancer Detection (Kaggle Competition) *2024*
Competition Link
Worked with a large dataset of dermoscopic images and corresponding metadata to classify skin lesions. The dataset had a significant class imbalance (almost 1:1000). Applied techniques such as heavily undersampling the negative class, using different negative examples at each epoch(to achieve generalization), and fine-tuning various convolutional neural architectures. Utilized CNN embeddings as features for XGBoost to improve classification accuracy. Learned various strategies like , Gem pooling, Stratified Group K fold and various augmentations to tackle class imbalance. Achieved a Partital ROC score of 0.145 on private leaderboard with a CNN only classification model and 0.168 with CNN embedding + metadata XgBoost model. *[GitHub: https://github.com/malevolentshryne/ISIC]*

AI of God 3.0: Transliteration of Spanish Texts from Centuries-Old Manuscripts *2024*
Competition Link
Developed a transliteration model using open-source OCRs as a baseline. Leveraged Hugging Face's TrOCR with zero-shot inference and fine-tuned it using LoRA. Addressed the challenge of generalization due to test images coming from different manuscripts. Focused on the Word Error Rate (WER) evaluation metric by rectifying spelling errors in generated text with Python's language tool. Converted training images and inference outputs into black and white to improve performance. *[GitHub: https://github.com/malevolentshryne/AI-of-God-3.0]*

ML Bootcamp *2024*
Developed a Machine Learning library consisting of several algorithms for regression and classification tasks. Implemented Linear Regression, Polynomial Regression, Logistic Regression, K-Nearest Neighbors, and a Fully Connected Neural Network from scratch using Python and NumPy. Trained the model on the given dataset of handwritten digits and achieved 94.18% classification accuracy on the test dataset. *[GitHub: https://github.com/malevolentshryne/ML-Project]*

Skills

Languages: C/C++, Python
Libraries: PyTorch, TensorFlow/Keras, Numpy, Hugging Face

Achievements

- Achieved a rank of 434 in the ISIC competition on the private leaderboard.
- Currently holding a rank of 2 in the AI of God 3.0 project.
- Won Winter of Code with a rank in the top 10.

Positions of Responsibility

- Member of the Machine Learning Division, Cyberlabs (Official Data and Software Technology Club).
- Member of the Competitive Coding Club (C3).

Additional Information

- Competitive data science and competitive programming enthusiast.
- Rated 1677 (Expert) on Codeforces.