**ABSTRACT**

**Title:** Celebrity Image Classification

This project is an end-to-end machine learning solution for sports celebrity image classification. It involves data collection, cleaning, feature engineering, model building, deployment, and UI development. Images of five sports figures are gathered from various sources and processed using OpenCV for face detection. Feature extraction is performed using wavelet transforms. Classification models, including SVM, logistic regression, and random forest, are trained and fine-tuned with GridSearchCV. The final model is deployed using a Python Flask server, which communicates with a user-friendly web interface built with HTML, CSS, JavaScript, and jQuery. The website allows users to drag and drop images for classification. The project emphasizes real-world execution, covering model evaluation, deployment on Amazon EC2, and adaptation for different sets of role models. This comprehensive approach mirrors corporate data science workflows, providing hands-on experience in model deployment and application development.

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