**Beyond age groups: continuous age prediction from handwriting using deep learning**

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Estimating age from handwriting has applications in biometrics, forensics, psychology, and historical analysis. Traditional classification methods impose discrete age groups, limiting precision. This study introduces a deep-learning framework for continuous age estimation using regression. We evaluate ResNet50, InceptionV3, DenseNet121, InceptionResNetV2, and EfficientNetV2M, together with ensemble strategies to enhance accuracy. Performance is assessed using multiple metrics, including MAE, RMSE, R² score, MAPE, and threshold-based accuracy within 2 and 5 years of actual age. Our results demonstrate the superiority of regression for handwriting-based age estimation, offering finer granularity and improved reliability. To the best of our knowledge, this is the first study to apply regression to the task of age estimation from handwriting, providing a more precise solution for real-world applications.

**Keywords**:**** deep learning; document image processing; ensemble of models; handwriting analysis; regression