# Submission Summary

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| **Conference Name** | 9th International Conference on Control Communication, Computing and Automation |
| **Track Name** | Cognitive Computing and Machine Learning |
| **Paper ID** | 220 |
| **Paper Title** | Blood Group Detection using Fingerprint Patterns: A Deep Learning Approach |
| **Abstract** | Accurate and timely blood group identification is crucial in medical diagnostics, transfusion medicine, and forensic science. Traditional blood typing methods rely on laboratory-based serological testing, which is accurate but invasive, time-consuming, and resource-intensive. This research proposes a non-invasive approach to blood group classification using fingerprint patterns and deep learning techniques. By leveraging the unique ridge patterns in fingerprints, a Convolutional Neural Network (CNN) based model was developed to predict blood groups with a high accuracy. The dataset was preprocessed thoroughly, including class balancing, image normalization, and augmentation to enhance the model's performance. The trained CNN was evaluated using standard classification metrics, including accuracy, recall, precision, and confusion matrix, which showed promising results in predicting blood groups. The results show the potential of deep learning models in biometric-based blood typing, a cost-effective, scalable, and rapid alternative to traditional methods. Future works should focus on increasing dataset diversity (a real-time dataset, like different age groups biometrics), transfer learning, and validating the model in real-world clinical settings to improve its robustness and generalizability. |
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| **Submission Files** | Blood_Group_Detection_using_Fingerprint_patterns__A_Deep_Learning_Approach.pdf (225.9 Kb, 3/30/2025, 9:36:37 AM) |

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