

# Fake Currency Detection using Image Processing

Uday Ghuli, Shridhar Patil, Deepak Patil, Pruthviraj Deshmukh

Students, Department of Electronic & Tele-communication Engineering

**Dr. S. V. Phakade**

Assistant Professor, Department of Electronics & Tele-communication Engineering

Padmabhooshan Vasantiaodada Patil Institute of Technology (PVPIT), Budhgaon, Sangli

**Abstract:** *The widespread circulation of counterfeit currency poses significant economic and security challenges worldwide. This project presents the design and development of a Fake Currency Detection System utilizing image processing techniques to authenticate currency notes. The system captures images of currency notes and applies a series of image processing operations such as grayscale conversion, edge detection, feature extraction, and pattern recognition to identify key security features including watermarks, micro-text, color patterns, and holograms. Advanced algorithms analyze these features and compare them against a database of genuine currency characteristics to detect anomalies indicative of counterfeit notes. The system aims to provide a cost-effective, fast, and reliable method for real-time currency authentication, reducing human error and enhancing financial security. This approach demonstrates the potential of image processing as an effective tool in combating the circulation of fake currency.*

**Keywords:** *fake currency*

