

TECHNICAL MEMORANDUM

Identity-Preserving AI Image Restoration Using Adaptive Feature Weighting and Multi-Image Template Generation

Author: Leo Portal

Based on the Following Intellectual Property

U.S. Patent No. 12,412,422 B2

Method and System for Verifying Image Identification

Issued Patent — Sole Inventor: Leo Portal

U.S. Patent No. 099642-005827USC1

Method and System for Verifying Image Identification (Infrared)

Issued Patent — Sole Inventor: Leo Portal

U.S. Patent Application Publication No. US 2018/0068173 A1

Method and System for Verifying Image Identification

Published Application — Sole Inventor: Leo Portal

Abstract

Current image restoration systems based on generative artificial intelligence excel at producing visually plausible outputs but frequently fail to preserve the precise identity of the original subject. In applications involving historical photographs, forensic imaging, genealogy, facial authentication, and digital preservation, identity fidelity is often more important than visual realism.

The concepts disclosed in U.S. Patent Application Publication No. 2018/0068173 can be interpreted in contemporary AI terminology as an identity-preserving framework that maps naturally onto several active areas of machine learning research. Specifically, multi-image template generation, feature extraction, weighted similarity scoring, adaptive weighting, and neural-network-based feedback mechanisms provide a coherent pathway for improving restoration accuracy while minimizing identity drift — functioning as a supervisory layer over existing generative architectures rather than replacing them.

Problem Statement

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