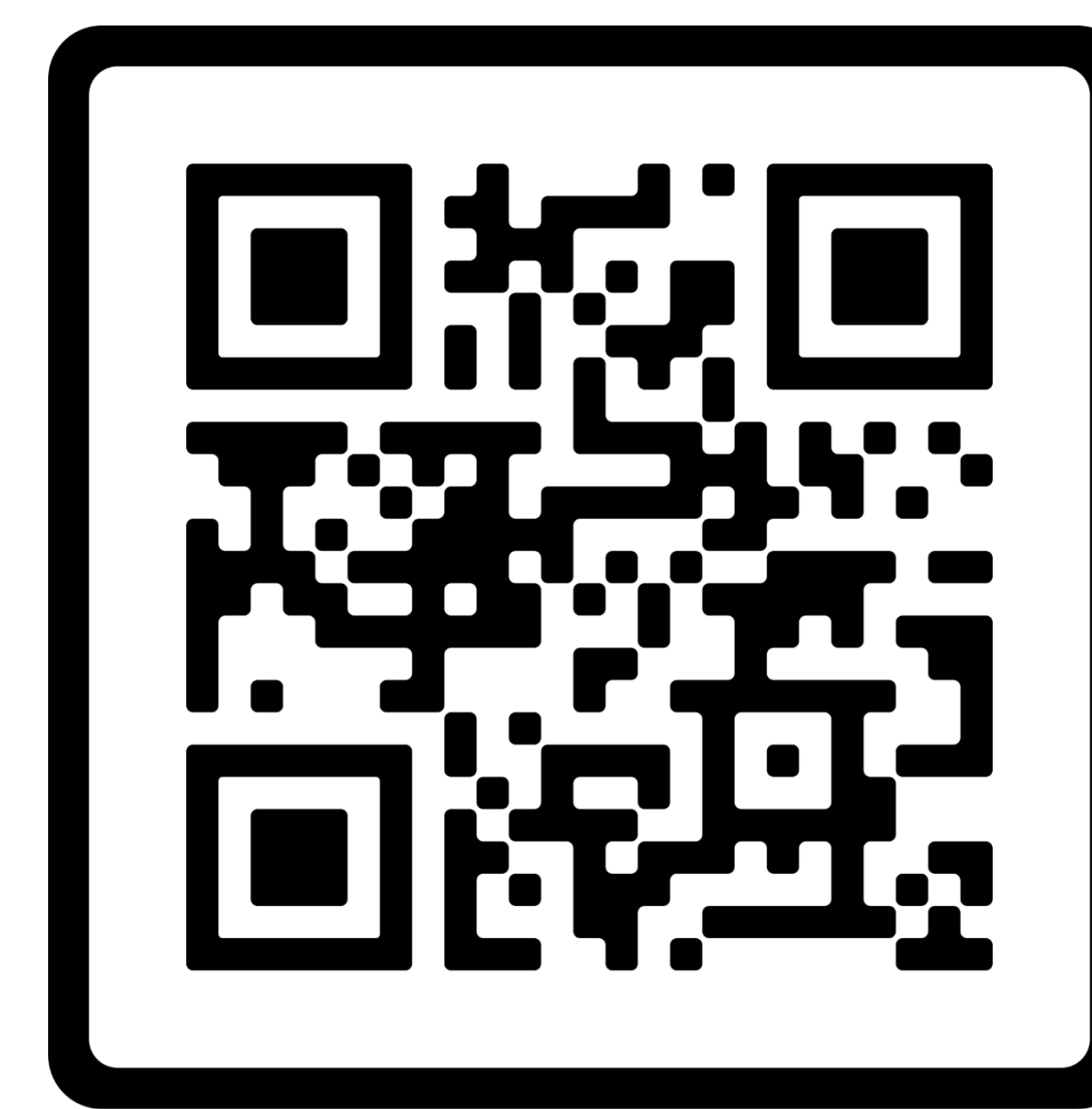# Mitigating the Threat AI Poses to Human Artists

By: Layla Semien

Introduction

- I am studying how human artists can combat the threat AI poses to their individual style and appeal in the creative field.

- Studying this allows artists to understand both how AI works against their craft and applications that they can use to minimize art theft.

- Its importance to the art industry is rooted in the growing concerns about the value of the art field, job security, and replaceability of human artists.
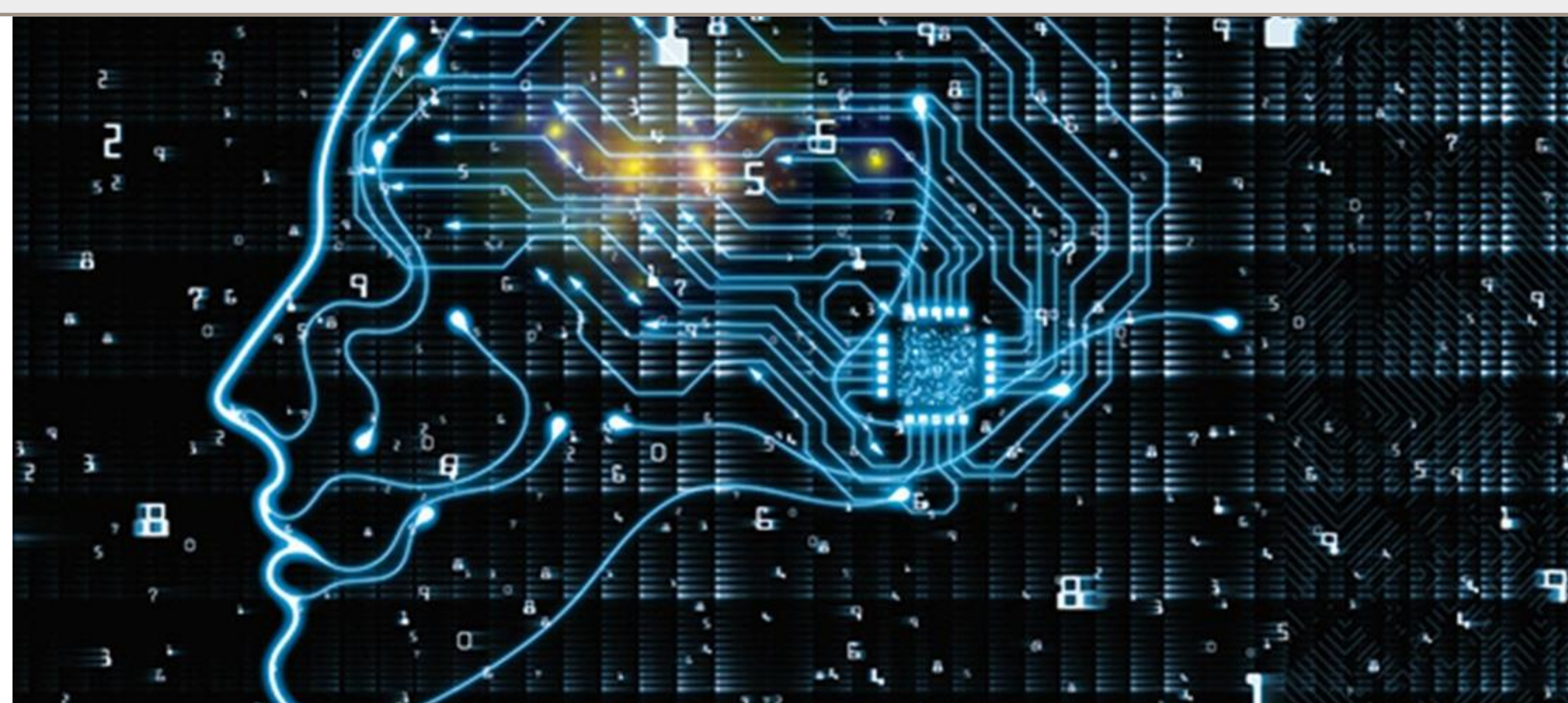
Objective

The purpose of my study would be to explore various anti-AI applications and programs developed to aid artists in concealing their art from the use of AI replication, theft, and mimicry.

Methodology

To conduct my research, I would have conducted a literature review to examine popular AI deterrent tools and evaluate their effectiveness in comparison to each other from the data presented in each source.

Results

Results would have likely found Nightshade to be the most effective anti-AI tool, but also the most tedious as multiple poisoned images would only gradually create distinctions. Glaze would likely be the most user-friendly overall since the product is instantaneous and can be altered. It is also the only art protection tool found to have an integrated check in system that detects attempts to bypass its system.
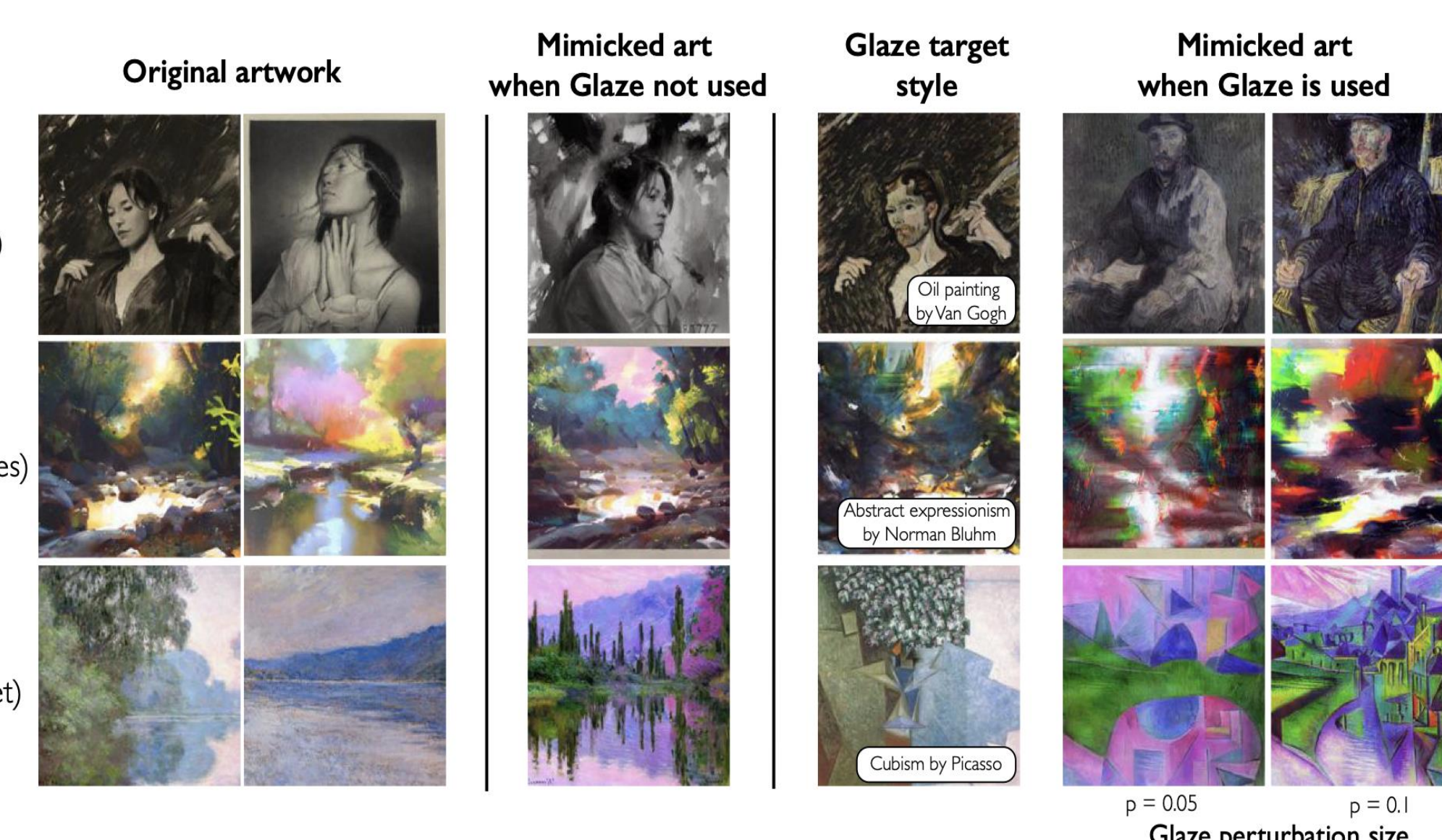
Analysis
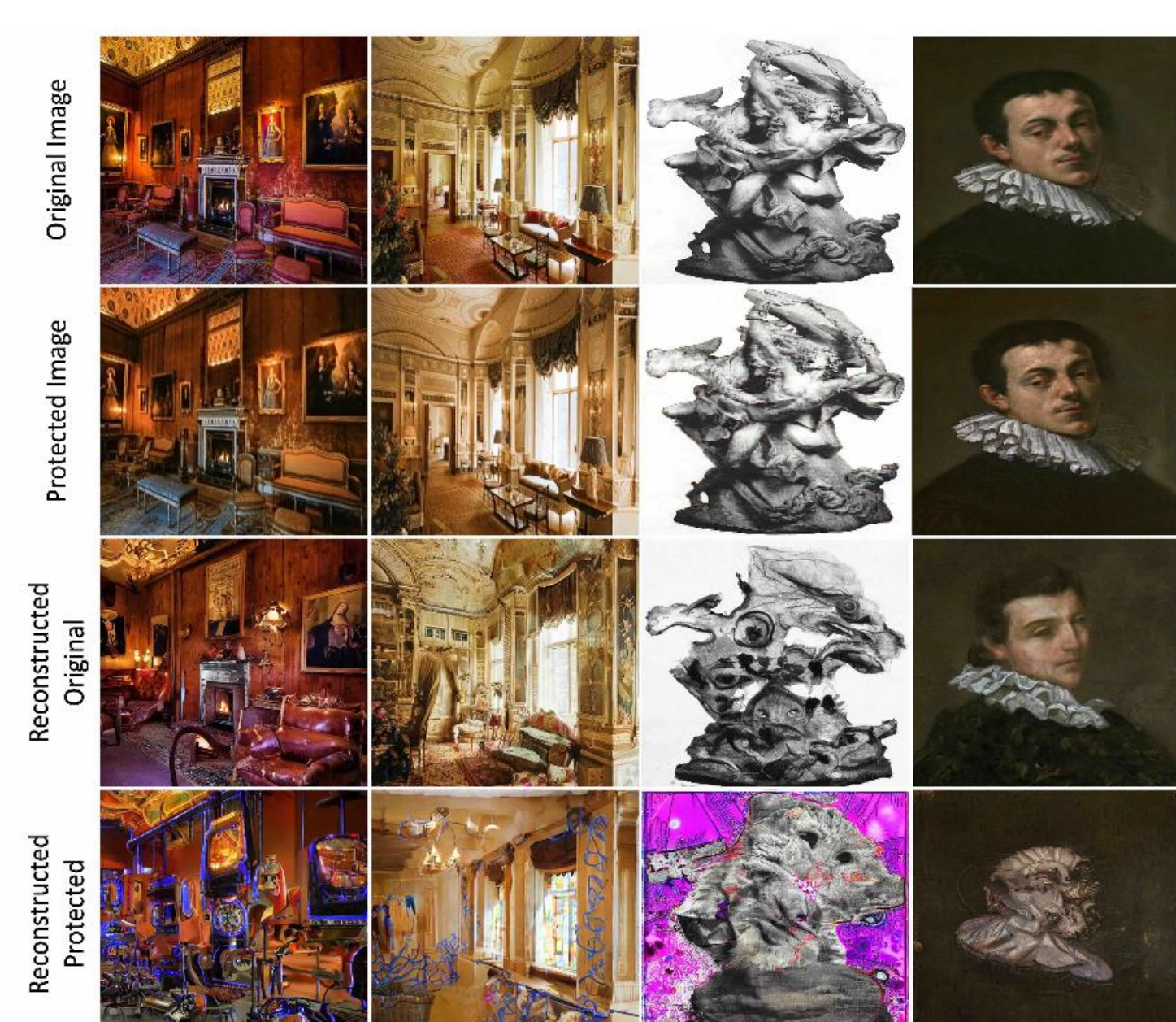
MAMC enables artists to protect their content (first row) by learning to create perturbed versions (second row). Diffusion models exploit the original artwork (third row), however, protected images break these models (last row).

Nightshade's results in feeding an AI poisoned images and the resulting AI outputs

Glaze protection results for three artists. Columns 1-2: artist's original artwork; column 3: mimicked artwork when artist does not use protection; column 4: style-transferred artwork (original artwork in column 1 is the source) used for cloak optimization and the name of target style; column 5-6: mimicked artwork when artist uses cloaking protection with perturbation budget p = 0.05 or p = 0.1 respectively
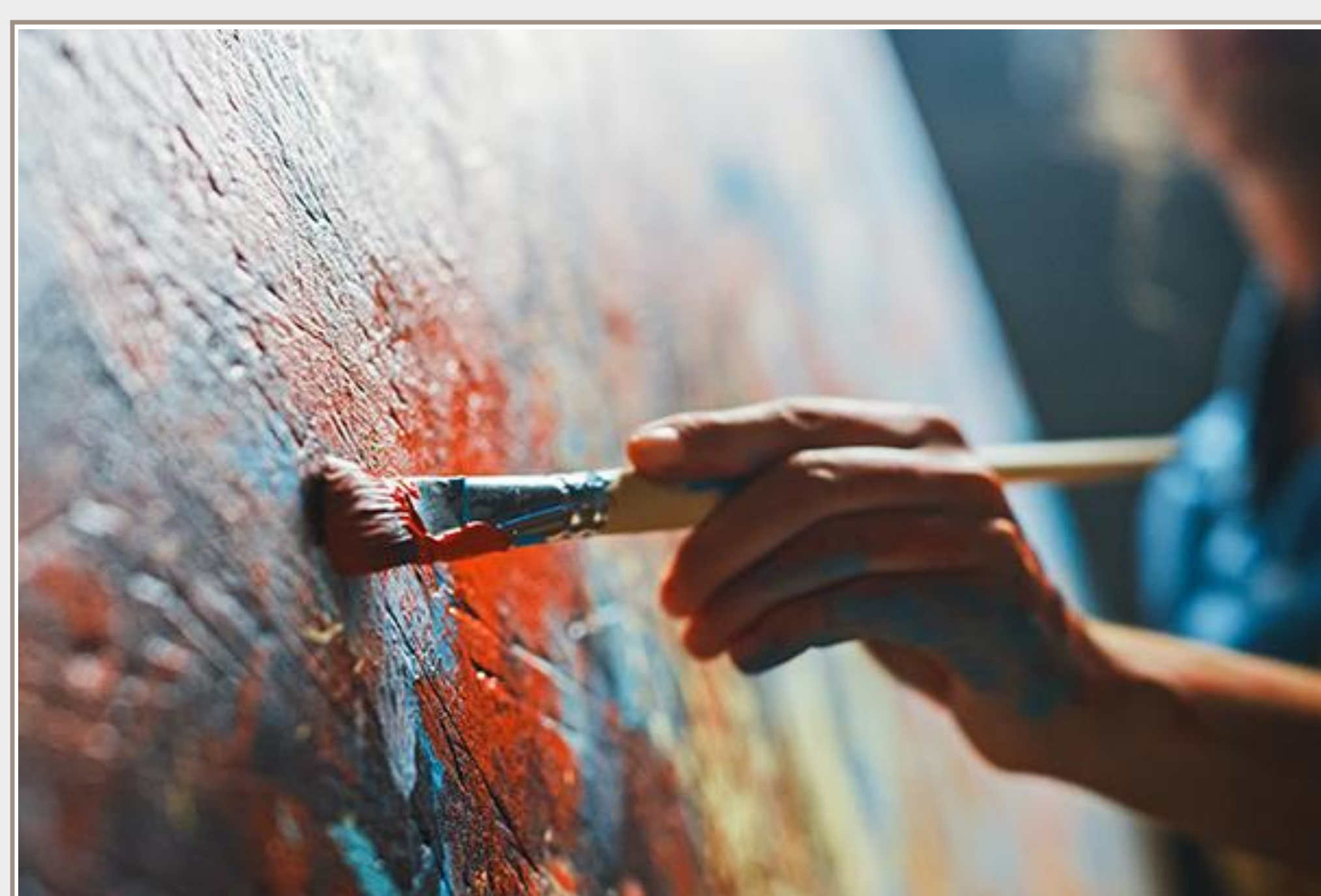
Findings

- Democratization of digital art and the potential for AI to significantly impact the future of creative industries.

- Further study and development required to eradicate potential bypass attacks on art protecting tools.

- Updated intellectual property laws are needed.

Future Implications:

- Increased use of tools such as Nightshade, MAMC, and Glaze

- Increased countermeasure attempts

- Potential to increase the commissioning of human artists

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