

Lab 1 First Draft

CS 410, Spring 2022

Art Guardian – Team Blue

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1. Introduction

As the popularity of NFTs increases so does the security risks. There are a lot of artists who are hesitant upon entering the NFT space due to the fact that many of the current NFT artist are having their artwork stolen frequently. With such a new art frontier there are bound to be evolving measures to ensure the whole system works for everyone involved. There has been a constant increase in reported NFT digital art theft due to a mirage of factors such as scammers, and loose NFT market regulations.

“The rise in such thefts comes as the market for non-fungible tokens, or NFTs, exploded last year, growing to an estimated \$22bn”. (Beckett, L. 2022, January 29).

Currently, NFT artist have to manually track down their artwork and put in DMCA's for each piece that may have been compromised. “OpenSea has grown at a dizzying pace, and is now valued at \$13bn. But amid its spectacular rise, the company is doing far too little to prevent the trade in fraudulent NFTs, some artists charge, and is placing much of the burden of policing art fraud on the artists themselves.” (Beckett, L. 2022, January 29).

Tracking stolen art and filling out DMCA takedown requests can be a tedious and tiring process that may discourage the artist from entering the NFT world. Having an automated process to track stolen artwork is a workaround to these frustrations that an artist may experience. There is no easy or automated way to search the various NFT marketplaces for stolen art and send DMCA takedown requests if a stolen piece of art is

found. This is where the Art Guardian can come in and help by providing a solution for these issues.

2. Product Description

The Art Guardian is a progressive Web Application that monitors an artist's artwork for theft on NFT marketplaces. The Art Guardian provides an automated system to detect stolen art that is being sold as an NFT and also eases the DMCA takedown process for artists. To ease the tedious DMCA takedown process, the Art Guardian will be able to pre fill DMCA requests if it finds a stolen piece of art and ask the artist to verify that the art identified is really theirs and proceeds to get a signature from the artist to send the DMCA takedown Request. The Art Guardian is the solution the NFT world needs.

2.1. Key Product Features and Capabilities

Using the Art Guardian, Artist will be able to upload their original art to the art guardian's database. Once a piece of art is in the Art Guardian database it is used to search against existing images on NFT marketplaces to find stolen artwork. An artist only needs to upload their art once in order for it to be searched multiple times. If a stolen image is found by the Art Guardian, then the Guardian proceeds to fill out a DMCA takedown request for that stolen art.

Once the DMCA is filled out it is sent to the artist for verification and a signature to send off the DMCA. The Art Guardian monitors sent and ongoing DMCA takedown requests.

With these features the Art Guardian will be able to solve the existing hassle of having

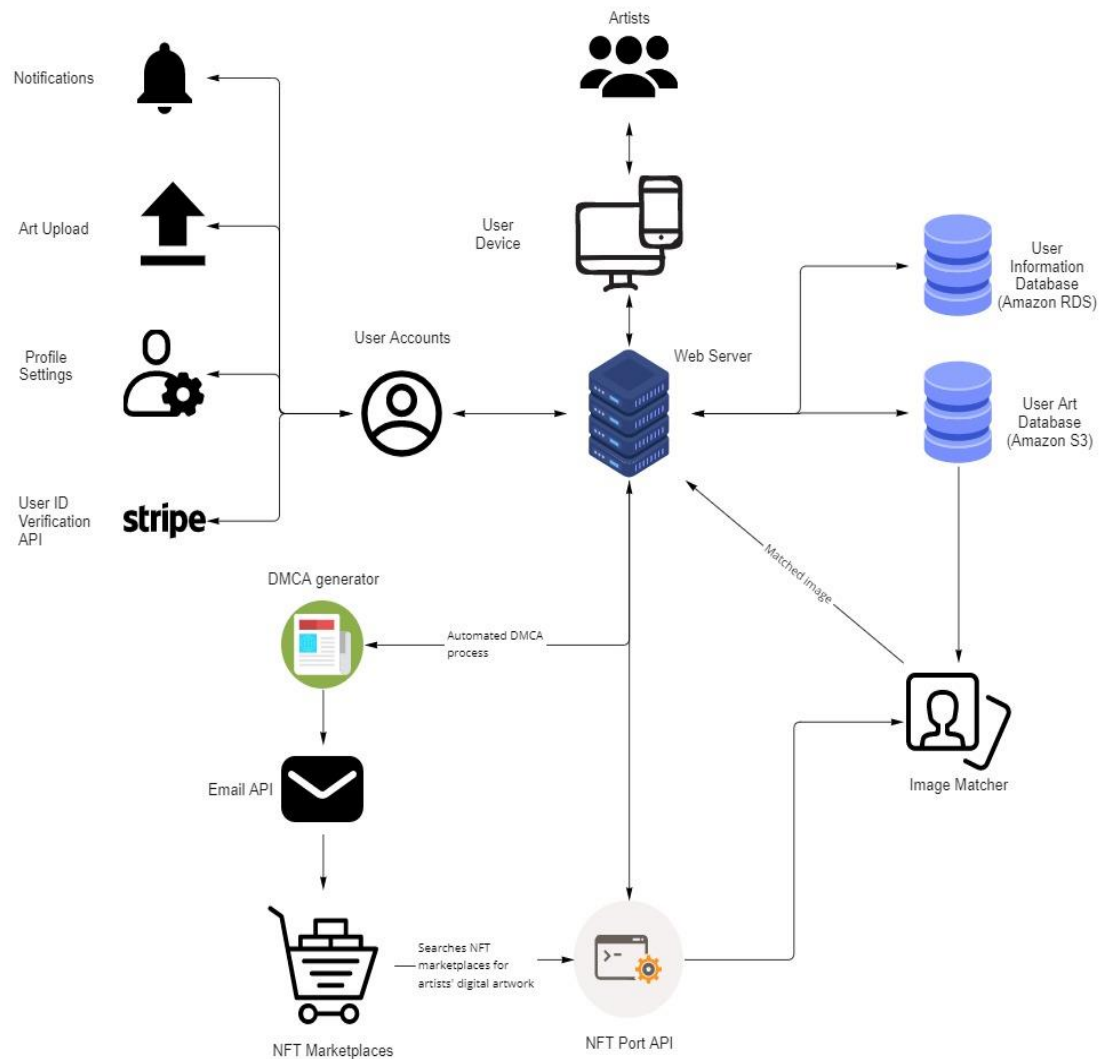
to manually search NFT marketplaces for stolen art and the tedious nature of filling out and sending DMCA takedown requests.

2.2. MFCD

The Art Guardian will be compatible with any PC or device that has internet connection and artists will be able to access the art guardian through either a mobile or web browser. Artists will have to verify their identities using an ID verification API. Artists will have access to their accounts where they will be able to edit their profile settings or notification settings and artists will also have access to the art upload feature. There will be two databases, one is used to store an artist's information and another is used to store an artist's artwork. Amazon RDS is planned to be used to hold artist information while Amazon S3 is to be used to store artists artwork.

The database that holds an artist's artwork is used to compare with the NFTPort database in order to find similar images. If a similar image is found then the art guardian will use OpenCV in order to see how similar the two images are and if it is a stolen piece. If OpenCV determines that a piece of art is similar enough to be considered stolen then a DMCA is generated and sent to the original artist for verification and a signature to send the takedown request.

The Web application will be developed using JavaScript, HTML, and CSS whilst the mobile Application will be developed using JavaScript and React Native.



3. Identification of Case Study

The Art Guardian is designed for commissioned and digital artists. Both commissioned and digital artist can use the art guardian to make the process of looking through NFT marketplaces for stolen art much less tedious. With the addition of generated DMCA takedown requests, the art guardian is the best application to be used to search for

stolen NFT art and immediately generating and sending a DMCA takedown notice. The art guardian can help commissioned and digital artists feel secure in the vast market of NFTs. Artwork should never be sold without the original artists permission and the Art Guardian is envisioned to ensure that for digital artist.

4. Product Prototype Description

- Architecture (Hardware/Software)
- Features and Capabilities
- Development Challenges

5. Glossary

- Art Platform - A website in which users can post their digital art
- Blockchain - An immutable ledger that anyone can validate
- DMCA (Digital Millennium Copyright Act) Takedown - A request sent by the owner of the copyrighted content to remove the infringing content from the internet or platform
- Minting - The process in which the files become part of the blockchain
- NFT Marketplace - An online platform in which NFTs are minted, sold, and collected
- NFT – Non-Fungible Token
- Non-fungible - Unique, indivisible, and irreplaceable
- NFTs are a certificate of ownership stored on a blockchain that links to a file

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