Lab 1 First Draft

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Art Guardian - Team Blue

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1. Introduction

The distribution of art is how one can showcase the art for sale, and in today's landscape that distribution can be done digitally. A new form of digital art distribution called a Non-fungible Token (NFT) has risen in popularity as in 2021, with the NFT market reaching a value of forty-one billion dollars (Business Insider, 2022). An NFT is a digital certificate for a piece of digital art that is created and stored on the blockchain to signify ownership of said art (BBC, 2021). A NFT can be sold for a large sum of money as the musician Grimes was able to sell some of her art for more than six million dollars (BBC, 2021). With how lucrative the NFT market is in terms of turning a profit, there are bound to be people who desire that profit. The main obstacle for them is getting digital artwork to mint their NFT to sell to an audience. While some people create their own art to mint NFTs out of them, others steal pre-existing artwork created by other people to mint and sell NFTS. The art platform Devaintart has sent out ninety-thousands alerts of possible NFT art theft, with the number of alerts doubling from October to November of 2021 to three hundred percent more alerts from November to December of 2021.

If an artist has their art stolen and used to create an NFT, what can they do about it? The artists would have to find the infringing NFT and submit a DMCA to takedown said NFT. This includes knowing the legal process and filling out the right documents for submission, which artists may not have the time or knowledge to do correctly. This issue is further quantified if more than one piece of their art is stolen. In order to help the artists with finding infringing NFTs and sending DMCAs, Team Blue's proposed solution is to create an application called Art Guardian. Art Guardian is a progressive web application that allows a user to upload their art to our application so that our app can monitor NFT marketplaces for infringing art NFTs. Once a stolen art NFT has been found, the application would generate a DMCA takedown request that

requires the user's e-signature to approve. Once the DMCA is approved, then the DMCA is sent to said marketplace to notify them of the NFT in hopes removing the NFT. This is a solution that would simplify and hasten the protection of the user's art.

2. Product Description

Art Guardian is a progressive web app where users upload their artwork into our database. The artwork has top be the user's original art, any violation will of this rule will be punished accordingly. Once the art is uploaded, our application will monitor popular NFT marketplaces for any infringing NFT. Once a stolen art NFT is found, the application will send an alert to the user notifying them of the NFT. From here the user will decide whether they want to send a DMCA. If the user proceeds with the DMCA, our app will generate a DMCA that the user can review. Then they would provide an e-signature which gives the app the permission to send the DMCA to the marketplace where the NFT is hosted. Art Guardian then monitors the progress of the DMCA as it is the marketplace's responsibility to remove the infringing NFT. If they fail to do so, our app will notify the user and it is up to them to pursue further legal action.
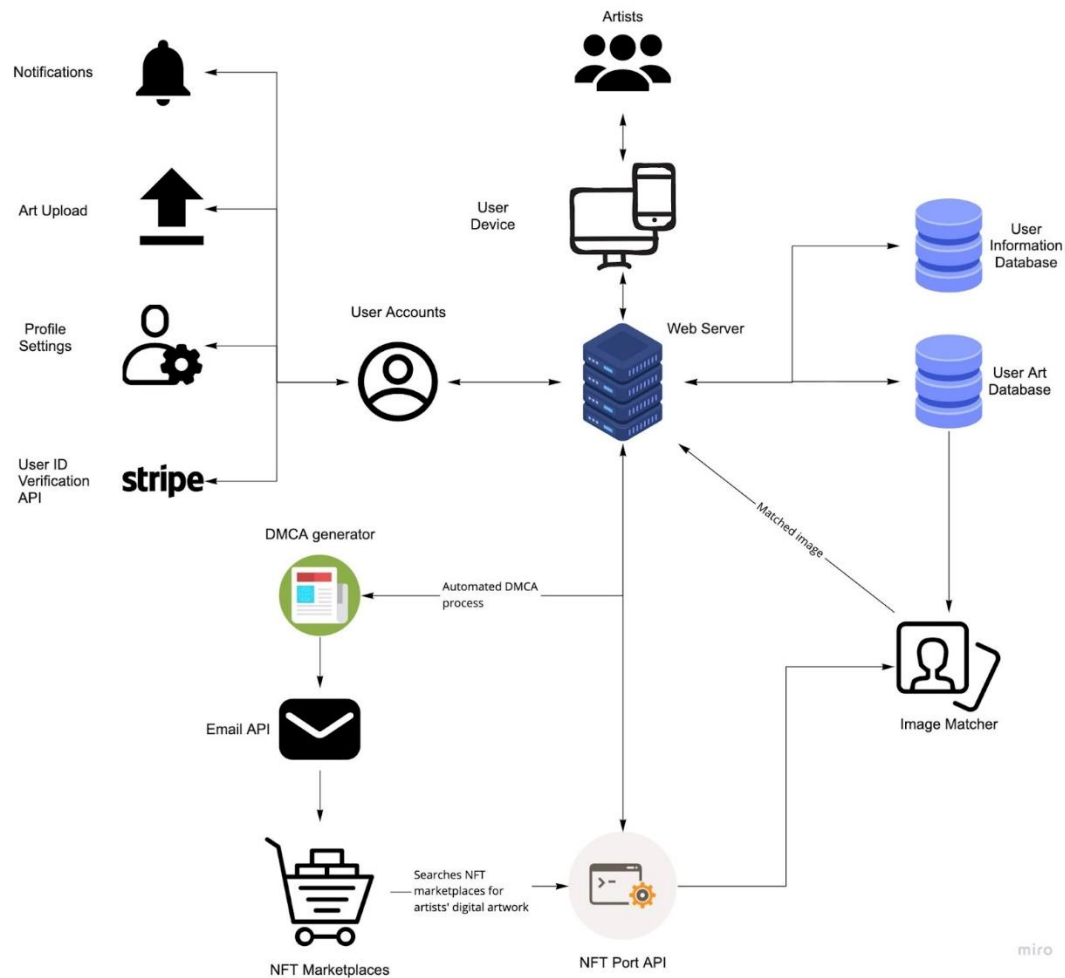
2.1 Key Product Description and Capabilities

Art Guardian allows the user to upload their art into our database for NFT marketplace monitoring. An artist will also be able to whitelist any NFT the artists minted themselves by providing a Token ID so that their NFT is exempt from marketplace monitoring. If an offending NFT is found, the app will notify the user via account notification and push notifications on mobile if they have our app. The user will be asked if the offending NFT has their art and if they would want to send a DMCA. If they respond yes to both questions, then a DMCA is generated, and the user is prompted for an e-signature. When the signature is given, they are liable for the

DMCA that is sent, and it is sent under the behalf of our company, so the user's identity is kept anonymous. If they reject the option to send a DMCA, then the app will ask them if they want the NFT to be whitelisted. If the user ignores the notifications or stops midway into the process, they will receive a notification every six days for thirty days. If the user fails to engage, then our database will delete information about the infringing NFT and will no longer notify the user about it.

A profile on Art Guardian will contain the user's legal information so that the user's identity is verified and the DMCA can be generated with the information. The profile will also link to the user's art account for verification that the art uploaded is their art. All DMCA requests that have been sent and or in-progress are stored in our database. The app will monitor and update the progress of their DMCA, and if the user chooses to pursue further legal action, the app will provide them with the necessary information. The app will also provide a "Tips and Tricks" and "FAQ " section to provide resources for defense against illegitimate NFT minting and troubleshooting.

2.2 Major Functional Components

Art Guardian will be available on IOS and Android devices and desktop computers. The desktop
website will be programmed using HTML, CSS, and JavaScript while JavaScript is used for
Android and React Native is used for IOS. Art Guardian will use Amazon RDS and AWS for
storage and encryption of user data and art. Git will be used for version control and team
development. The NFT Port API will be sued to monitor art NFTs on marketplaces, with
OpenCV being responsible for image matching. The user's identity will be verified using the
Stripe API. A DMCA generator will automatically generate DMCAs that will be sent via email
through the Gmail API.

3. Identification of Case Study

The Audience for Art Guardian is commissioned artists as their livelihood is dependent on them being able to sell their art. Art theft through the means of NFT minting threatens their livelihood as they aren't receiving the money made from those NFTs being sold. Our NFT tracking and auto-DMCA system allows artists who upload our art to our database will send the artist a notification about a possible infringing NFT. If the NFT is infringing, then the artist can issue a DMCA. Our app will also allow artists who mint their art to whitelist their NFTs to avoid any false positives within our system. Art Guardian exists to protect commissioned artists and NFT artists with the eventual goal of expanding protection to all digital artists. It can also be used with art platforms for further protection.

4. Art Guardian Prototype Design Description

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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