

### 3.2 Ideation & Brainstorming

#### FAKE LOGO DETECTION

##### PROBLEM STATMENT

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

**Utilization of VGG19-based deep learning for the detection and authentication of logos to tackle counterfeit and fraudulent activities. This encompasses training the model for logo differentiation and leveraging it for automated inference, ultimately enhancing brand security and product authenticity.**

# Brain Storming

## Brainstorm

Write down any ideas that come to mind that address your problem statement.

🕒 10 minutes

### TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

Develop an advanced logo detection tool with a user-friendly interface, allowing specialists to quickly upload and verify logos.

Create a platform where consumers can report and share their experiences with counterfeit products, fostering a community that promotes awareness.

Create a mobile app that enables logo authentication specialists to verify logos in real-time using their smartphones, making the process more efficient and accessible.

Create a web app that can use the R-CNN or Faster R-CNN algorithm to quickly detect any anomalies that are present on the logo when it is uploaded by the user to recognize its authenticity.

Create a tool that utilizes OpenCV technology to detect and understand the authenticity of the logo

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In our Platform we can categorize the logo in different types (like fashion brand logo, different car companies logo, etc) and then will study that data and try to find patterns (like which brand has most fake logo), which country has the most use of these fake brands and assist those companies providing the effective counterfeit measures this service will be exclusive for the AMC's only

Making models more interpretable and transparent for users that provide clear explanations for their decisions

Create a fake logo detection feature that can be used by third-party services in order to inspect the logo design elements, whether they are original or imitated.

We can use Quix as they are the most popular choice for image-based tasks, including logo detection. You can train a CNN for binary classification to distinguish between real and fake logos. Popular CNN architectures (like VGG, ResNet, and Inception) are commonly used as a starting point.

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Handling changes in logos over time as companies update their logos.

Creating models that can identify misuse, even when logos are resized, rotated, or incorporated into new designs

We can also use Siamese networks which are used for one-shot image recognition task and it's embedded with a pre-trained model that is fine-tuned on a challenging logo dataset and we get a encoded outputs for each image are afterwards which is compared using a trained metrics and thresholded get defined matches and mismatches. So the proposed approach gives an accuracy of 77.07% under the one-shot constraints in the Quix OpenLogo dataset