Delete It

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What is Delete It?

 Delete It is a android/ios application that uses a Machine Learning model to automatically deletes images from users' mobile phones based on their preferences.



Need Analysis



- In the modern era of social media, no matter how much storage you have in your cell phone, it is always scarce..
- As the technology advances, all applications are getting bigger and bigger requiring more storage space.
- Cloud storage is not a solution as it is only free upto a limit. It's really costly if you need a good amount of storage space.

Need Analysis (continued)

- We continuously receive images and other kind of media files on social media apps. Most of them (>90%) are no longer needed once viewed.
- These media quickly fill up the storage space on our phones. (especially since most of them have automatic downloads enabled.)
- People don't have the time to manually delete these images due to their enormous number.
- But once these images are deleted, they free up a considerable amount of storage space.
- Delete It is an attempt to simplify the task, where user will only delete from a small set of images and the ML model will filter out the rest.
- So you can now install any number of applications on your phone without worrying about all these images taking up your storage space.

Expected Outcomes

- The app allows the user to manually delete images from their cell phones.
- It then trains a Machine Learning model that learns from the users' preferences (i.e what sort of images they are deleting/keeping).
- The ML Model will get better and better as the user deletes more images manually. (i.e, basically it will get better over the period of time).
- Users have the option to filter out rest of the images using the model.
- The application will then use the model to find the images that match the users' preferences and send them to trash, from where they will be removed after certain amount of time.
- Trash is provided so that user can restore an image in case it is wrongly removed by the application.

Features

- The ML model will gradually improve over time, as the user selects more and more photos to delete.
- An account will be created for each user and model parameters will be linked to that account. In case user changes his/her mobile phone, his model parameters will be saved.
- If user recovers any image from trash, the model will take note of it and tune its parameters accordingly.

Work Plan

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1	Identification, Formulation & Planning of Project	Plan																																		
2	Machine Learning Planning	Plan					3																													
3	Data Collection & Preprocessing	Plan																																		
4	Model Development	Plan																																		
5	Model Testing & Optimization	Plan													0 8																					
6	UI/UX Design	Plan																																		
7	Frontend Development	Plan																																		
8	Backend Development	Plan																				ļ														
9	API Integration	Plan									3		3		3							î														
10	Finalizing and Deployment	Plan																		8																

Methodology

- The application (client) will send the image data to the backend server, where the model is stored and trained.
- ML model will be trained on the images sent by the client.
- When the client sends the request to filter images, the model will send the filtered images (i.e what to delete and what to keep) in response.
- The client will then process the response and show the images to delete to the user for confirmation. Once the user confirms, the selected images will be sent to trash.
- If user recovers any image from trash, client will notify the server, and server will tune the model's parameters accordingly.

Assumptions

- **User Engagement:** The User will actively engage with the app by manually deleting images, which will help train the model.
- Data Privacy: Users will trust the app with access to their images for training the ML model.
- Accuracy Improvement: The more the user uses the app, the better the ML model becomes over time.

Constraints

Image types: The model will perform at different accuracies for different types of images.

Model Learning time: The model will take some time to learn and will give sub-optimal performance in the beginning.

Internet Connectivity: The app need constant connectivity to the internet.

Trash Period: The images sent to trash are permanently deleted after certain amount of time. They cannot be recovered after that time is gone.

Project Requirements

React Native: For the user interface(client side) using React Native's components.

Django: Using Django to create RESTful APIs for communication with the React Native frontend.

Python: Libraries like Scikit-learn, TensorFlow etc. for training the model.







Individual Contributions

• Machine Learning/Django server Development:

Hitesh Aggarwal, Naman Goyal

• React Native/Application Frontend/ Client server communication:

Hrithik Garg, Shree Krishan Singla, Aaryan Sood

Thanks