



# Re:Draw

# OpenCV

Satish Garg  
Cambridge School Noida

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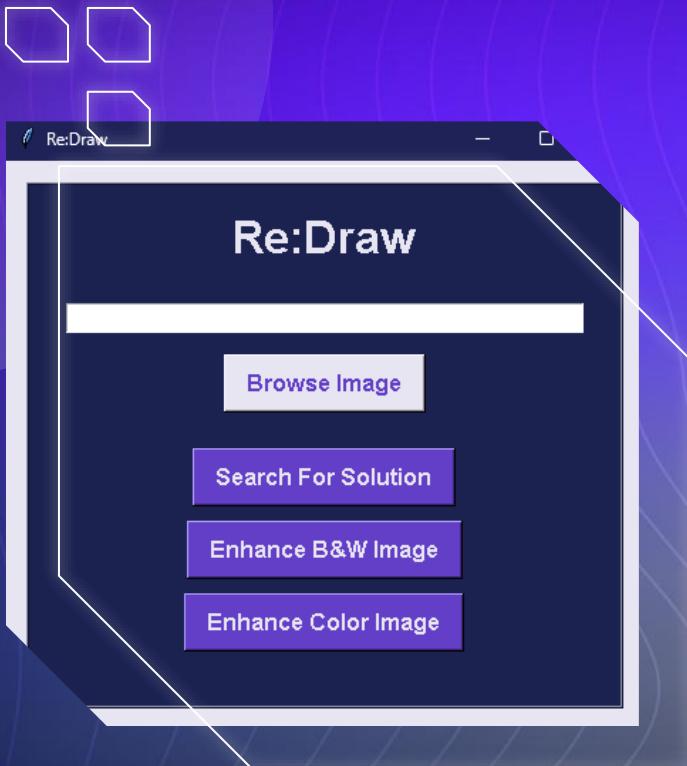
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# Introduction

**Re:Draw** is an OpenCV project based to convert handwritten notes or questions into text. It enhances low-quality images, removes noise, and making it easier for students and educators to digitize and organize material.





# GUI

The app includes a clean GUI built with Tkinter.

The interface is responsive and includes real-time feedback and file previews.

To run the app, open CMD and run the “main.py” file



# Extract Text

This function allows the user to extract written text from an image of a question or similar. The user selects an image file, and the system processes it using OCR. The extracted text is then directly searched on google to make it easy to find the solution. The extracted text has enough similar keywords so the user can find the exact question online.

can you convert the following  
But-1-ene to 1-iodobutane  
Benzene to acetophenone  
Ethanol to propanenitrile

## Extracted Text

How can you convert the following  
y fi But1ene to Liodobutane woe Gi  
Benzene to acetophenone ii  
Ethanol to propanenitrile



# Enhance Image

This function improves the quality of an image based on the user's choice of enhancement method. After processing, the enhanced image is saved, and the file is opened for the user to review. This tool is ideal for improving image clarity and quality, making it easier to read or analyze.

# Enhance Image (B&W)

Class Time Table									Cambridge School
Day	1	2	3	4	5	6	7	8	
Time	08:20 AM - 08:55 AM	08:55 AM - 09:30 AM	09:30 AM - 10:05 AM	10:05 AM - 10:40 AM	10:40 AM - 11:15 AM	11:40 AM - 12:15 PM	12:15 PM - 12:50 PM	12:50 PM - 01:25 PM	01:25 PM - 02:00 PM
Monday	C.Sc.,Ph.Ed Preeti_KSA_NJ	Phy Suvendu_G	HPE_ABC	Maths Rohit_D	Maths Rohit_D	Phy LAB,Chem LAB Suvendu_G, Mamta_R	Phy LAB,Chem LAB Suvendu_G, Mamta_R	ENG Bharti_S	ENg Bharti_S
Tuesday	ENG Bharti_S	Maths Rohit_D	Phy Suvendu_G	Chem Mamta_R	Chem Mamta_R	C.Sc.,Ph.Ed Preeti_KSA_NJ	C.Sc.,Ph.Ed Preeti_KSA_NJ	Phy Suvendu_G	Maths Rohit_D
Wednesday	CT Rohit_D	Chem Mamta_R	ADM_XII_AB_C	Maths Rohit_D	ENG Bharti_S	Chem Mamta_R	Lib,Logic Milind_Kr,KA_MA	C.Sc.,Ph.Ed Preeti_KSA_NJ	C.Sc.,Ph.Ed Preeti_KSA_NJ
Thursday	Maths Rohit_D	C.Sc.,Ph.Ed Preeti_KSA_NJ	C.Sc.,Ph.Ed Preeti_KSA_NJ	Phy LAB,Chem LAB Suvendu_G, Mamta_R	Chem Mamta_R	Phy LAB,Chem LAB Suvendu_G, Mamta_R	Maths Rohit_D	HPE_ABC	
Friday	CT Rohit_D	Phy Suvendu_G	Phy Suvendu_G	Chem Mamta_R	ENG Bharti_S	Maths Rohit_D	GST_Sunetra_B	ENG Bharti_S	C.Sc.,Ph.Ed Preeti_KSA_NJ
Saturday									

5 Time: 11:57:50

Before

Before processing

After

After processing

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Tuesday	ENG Bharti_S	Maths Rohit_D	Phy Suvendu_G	Chem Mamta_R	Chem Mamta_R	C.Sc.,Ph.Ed Preeti_KSA_NJ	C.Sc.,Ph.Ed Preeti_KSA_NJ	Phy Suvendu_G	Maths Rohit_D	Maths Rohit_D
Wednesday	CT Rohit_D	Chem Mamta_R	ADM_XII_AB_C	Maths Rohit_D	ENG Bharti_S	Chem Mamta_R	Lib,Logic Milind_Kr,KA_MA	C.Sc.,Ph.Ed Preeti_KSA_NJ	C.Sc.,Ph.Ed Preeti_KSA_NJ	C.Sc.,Ph.Ed Preeti_KSA_NJ
Thursday	Maths Rohit_D	C.Sc.,Ph.Ed Preeti_KSA_NJ	C.Sc.,Ph.Ed Preeti_KSA_NJ	Phy LAB,Chem LAB Suvendu_G, Mamta_R	Chem Mamta_R	Phy LAB,Chem LAB Suvendu_G, Mamta_R	Chem Mamta_R	Phy Suvendu_G	Maths Rohit_D	HPE_ABC
Friday	CT Rohit_D	Phy Suvendu_G	Phy Suvendu_G	Chem Mamta_R	ENG Bharti_S	Maths Rohit_D	GST_Sunetra_B	ENG Bharti_S	C.Sc.,Ph.Ed Preeti_KSA_NJ	
Saturday										

5 Time: 11:57:50



# Enhance Image (Color)

If A and B are symm matrix show that  
skew symm

Given,  $A^T = A$  To show,  $(AB - BA)$  is skew symm  
 $B^T = B$   $\Rightarrow (AB - BA)^T = -(AB - BA)$

$$\begin{aligned}\rightarrow (AB - BA)^T &= \\ &= (AB)^T - (BA)^T \\ &= B^T A^T - A^T B^T \\ BA - AB &= -(AB - BA)\end{aligned}$$

## Before

Before processing

## After

After processing

If A and B are symm matrix show that,  $AB - BA$  is  
skew symm

Given,  $A^T = A$  To show,  $(AB - BA)$  is skew symm  
 $B^T = B$   $\Rightarrow (AB - BA)^T = -(AB - BA)$

$$\begin{aligned}\rightarrow (AB - BA)^T &= \\ &= (AB)^T - (BA)^T \\ &= B^T A^T - A^T B^T \\ BA - AB &= -(AB - BA)\end{aligned}$$



# Applications Of Re:Draw



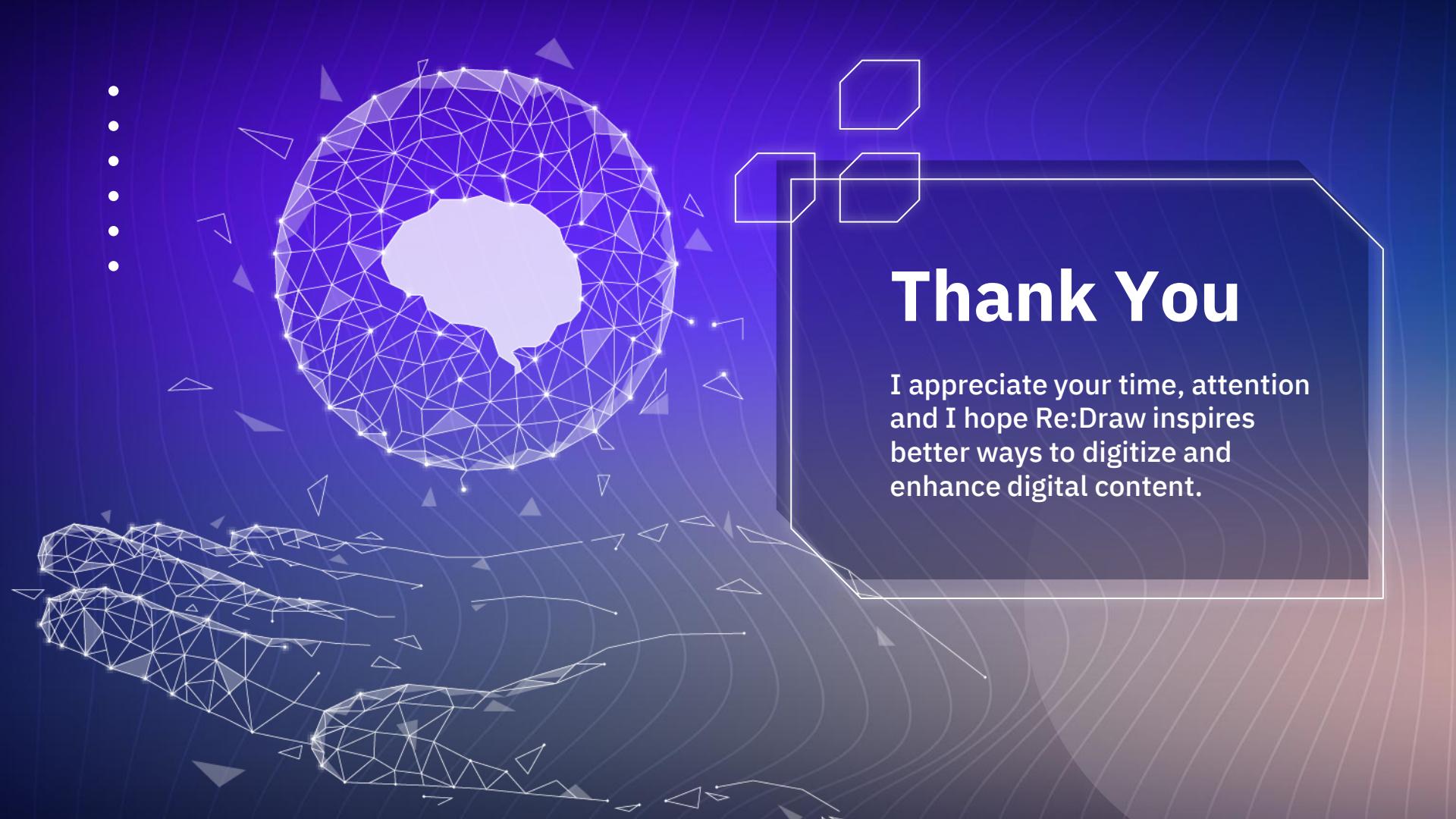
## Enhance Image

Can be used to improve quality of notes, diagrams and images.



## Extract Text

May be used to easily extract text from questions in order to find solutions online.

The background features a dark blue gradient with concentric white circular lines. Overlaid are several white wireframe geometric shapes: a large sphere on the left, a smaller sphere at the bottom, a hexagon above it, and a rectangular frame containing the text on the right. Small triangles and dots are scattered around the spheres.

# Thank You

I appreciate your time, attention  
and I hope Re:Draw inspires  
better ways to digitize and  
enhance digital content.