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import os
import random
import string
from pathlib import Path
import numpy as np
from tensorflow.keras.models import load_model
from PIL import Image, ImageOps

def random_name_generator(n):
    return "".join(random.choices(string.ascii_uppercase + string.digits, k=n))

def recognize(image):
    model=load_model(Path("./model/model.h5"))

    img = Image.open(image).convert("L")
    img_name = random_name_generator(10) + '.jpg'

    if not os.path.exists(f"./static/data/"):
        os.mkdir(os.path.join('./static/', 'data'))
    img.save(Path(f"./static/data/{img_name}"))

    img = ImageOps.grayscale(img)
    img = ImageOps.invert(img)
    img = img.resize((28, 28))
    img2arr = np.array(img)
    img2arr = img2arr / 255.0
    img2arr = img2arr.reshape(1, 28, 28, 1)

    results = model.predict(img2arr)
    best = np.argmax(results,axis = 1)[0]

    pred = list(map(lambda x: round(x*100, 2), results[0]))
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values = [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
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others = list(zip(values, pred))
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best = others.pop(best)
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return best, others, img_name
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