

```

clc
close all
clear

RGBImage = imread('dogs.jpeg');
Image = rgb2gray(RGBImage);
Height = size(Image,1);
Width = size(Image,2);
Simulations = 1e3;
KeySensitivity = zeros(Simulations,2);
tic
for Iterations=[1,10,100]
    filename = sprintf("OldKeySens%dSim%dIt.mat",Simulations,
        Iterations);
    for i=1:Simulations
        %% Encryption
        Password = [3.9+0.1*rand(),rand()];
        Mu = Password(1); %Logistic Map parameter:  $3.9 < \mu < 4.0$ 
        X0 = Password(2); %Logistic Map initial value:  $0 < X_0 < 1$ 
        Sequence = LogisticRandomSequence(Height*Width,Mu,X0);

        LifeEncoded = Encrypter(Image,Sequence,'Life',Iterations);
        FredkinEncoded = Encrypter(Image,Sequence,'Fredkin',Iterations);

        %% Key sensitivity test
        PerturbedSequence = LogisticRandomSequence(Height*Width,Mu+eps,X0+eps)
            ;

        PerturbedLifeEncoded = Encrypter(Image,PerturbedSequence,'Life',
            Iterations);
        PerturbedFredkinEncoded = Encrypter(Image,PerturbedSequence,'Fredkin',
            Iterations);

        KeySensitivity(i,:) = ...
            [corr2(LifeEncoded,PerturbedLifeEncoded),...
            corr2(FredkinEncoded,PerturbedFredkinEncoded)];
        disp(100*i/Simulations)
    end
    save(strcat('data/',filename))
end
toc

```