

**College of Engineering Chengannur**  
**Department of Computer Engineering**  
**M. Tech. Computer Science(Image Processing)**  
**03CS6902 Mini Project**  
**Periodic Report No. 12 (For the period 01/09/2021 to 10/09/2021)**  
**PixelRL: Fully Convolutional Network with Reinforcement Learning for Image Processing**  
**CHN20CSIP01 GOWRI B NAIR**

## **1 Work Assigned**

Presentation of the design of project and first step of implementation that is PixelRL

## **2 Work Done**

Got approval for implementation, analyzed algorithm of the project and started working on first step of implementation that is PixelRL.

## **3 Discussion of Design Presentation**

1) Suggested to rewrite the problem statement according to problem specific

Corrected as: Develop an effective method for basic image processing operation that requires pixel-wise intensity manipulation such as image denoising.

2) Suggested to rewrite the proposed solution according to the problem statement

The proposed solution is pixelRL for image processing. PixelRL is a multiagent RL problem, where each pixel has an agent. The agents learn the optimal behavior to maximize the mean of the expected total rewards at all pixels. Each pixel value is regarded as the current state and is iteratively updated by the agent's action. The proposed pixelRL is applied to image denoising with hybrid median filter.

## **4 Work Schedule for Next 10 Days**

Next step of implementation that is reward map convolution

## **5 Assessment of Guide**

Performance assessment & Remarks by the guide: Poor/Acceptable/Satisfactory/Good/Very Good/Excellent

Name & dated signature of the guide: