

# INFO8010: Report template

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## I. INTRODUCTION

This paper present a method to address the long-standing problem of view synthesis. View synthesis aims of create any new kind of view from any direction, given a set of input images along with its known camera poses, of a given scene. NeRF, *Representing Scenes as Neural Radiance Fields for View Synthesis*, achieves state of the art result by representing a scene using a fully-connected deep neural network that given a viewing direction  $(\theta, \phi)$  and a spacial location  $(x, y, z)$  outputs an immitted color  $c = (r, g, b)$  and a volume density  $\sigma$ .

More intuitivly to represent a pixel the radiance emitted in each direction  $(\theta, \phi)$  at each point  $(x, y, z)$  in space. And output a single volume density

The idea is to overfit a neural network to a particular scene for wh NeRF, Representing Scenes as Neural Ra-

diance Fields for View Synthesis, represent a scene using a fully-connected deep neural network whose input is a is a method that achieves state-of-the-art result of view synthesis. Given a set of input images with known camera poses of a given scene, this method can synthesize any kind of view from any point of view and for any viewing direction, by **optimizing an underlying continuous volumetric scene function**. Overfit NN to single data point

Formally a scene can a neural network fit to a particular scene (overfit a single nn for a particular scene)

Position + viewing direction => Output a color c (what color is at that particular location + density is there something or not). Ask the neural network (that represent the scene, overfit well), in a particular location viewed from a particular angle what am i going to see

Use of fully connected

## II. SECTION 2

## III. SECTION 3

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Note need to store a mesh of voxel grid of some scene but a neural network that can be queried