Distribution Ray Tracing

Team 8
Project 11

Fuzzy Phenomenon Implemented

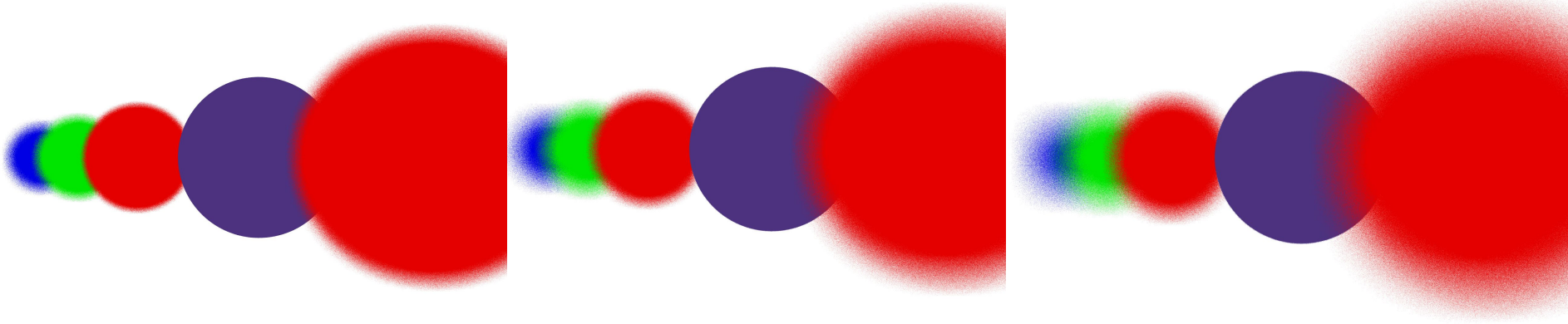
- Antialiasing
- Depth of Field
- Soft shadows
- Motion Blur

Antialiasing

- Divided a pixel into $n \times n$ cells and emanated n^2 rays from a random distance ξ from the left boundary of each of the cells.
- Stratified sampling - a hybrid of uniform and random sampling strategies.
- Computationally inexpensive by sampling only for the edges.

Depth of Field

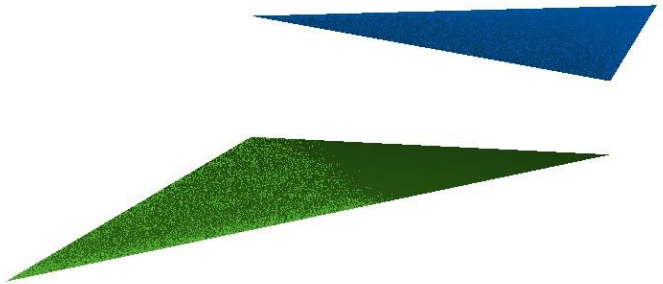
- Sampling the viewing rays from the lens. The aim is to capture the rays going towards the focal plane to simulate a focusing effect similar to using a camera lens.



Soft Shadows

Implemented an area light source by multiple point light sources in a small area.

Also tried distributing the shadow rays at a point and taking the average.



Motion Blur

Ray traced the a pixel ‘frame’ number of times and averaged the color while the object moved giving the effect of sampling in time.