# Center for Graphics and Geometric Computing

## Lab Project 234326 proposal

## Spring 2014

## *Rendering - Path Tracer denoising*

### Description:

One of the techniques used to create physically based images from a scene is Path Tracing. A path tracer renders the scene progressively, starting with a very noisy image and improving the rendering with time. As you can see in the pictures, the first images are indeed very noisy, and actually, even after hours, some noise can still remain.

Most of techniques used to reduce noise are actually incorporated in the path tracing algorithm, like improving the samplers for instance. The goal of this project would be to explore the possibility to use the information we know about the scene to denoise the already rendered image before printing it to the screen.

### Why choose this project?
- You will learn about path tracing, denoising and Maya integration
- You are free to propose any technique you want

### Prerequisites:

- Good programming skills in C/C++
- Having completed the Image Synthesis course is an advantage

### References:

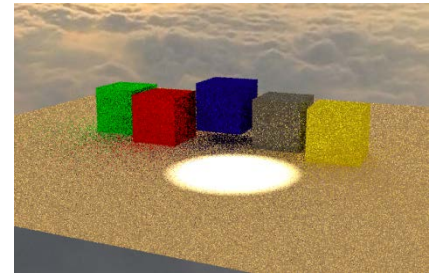"Robust Image Denoising using a Virtual Flash Image for Monte Carlo Ray Tracing"
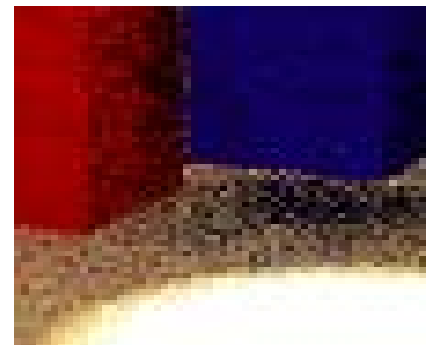
### Advisor:
Alexandre Djerbetian, Taub 420
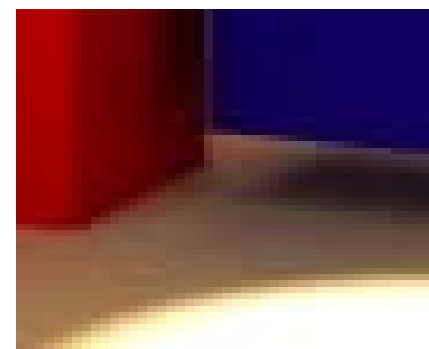djerbeti@tx.technion.ac.il

### Number of students:

2, but all propositions can be debated.



**Simple scene rendered with a path tracer**



**Noise at the 1st image**



**"perfect" image**