CS580

Programming Assignment #2
Due: 11:59pm on Apr.-22 (Fri.)

Objective: Understand impacts of adaptive sampling and get to know more about pbrt

Developing environment: Windows OS is recommended; you can use it linux or other OS

Requirements:

1) Given a user specified ray budget (e.g., 10K sample counts), distribute those ray samples over pixels of the view space according to an adaptive or error metric. A simple metric would be variance metric.
2) Compare its visual quality and runtime performance with a simple uniform sampling.
3) Measure MSE between your result and a reference that is generated by a high number of sample counts. Do the same thing for a result generated by the uniform sampling in the same sample count.
4) Also, measure and compare the runtime cost of your method against that of uniform sampling
5) Which method is better? Explain why you think so. Explain your adaptive metric.

| Uniform sampling
(64 samples per pixel) | Adaptive sampling | Reference |

Deliveries:

1) Source codes that you wrote or modified
2) A document summarizing your final rendering images (those of adaptive sampling and uniform sampling) with their rendering time and MSE. The document should explain the adaptive metric that you used
3) Send them to TA (donghyuk.kim@kaist.ac.kr) with your name and student number

Policies:

1) Everyone must turn in their own assignment. You can collaborate with others, but any work that you turn in should be your own