

Structured Abstract

Analysis and Performance evaluation of

Terapixel rendering in (Super)Cloud

Computing Data

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The main goal is to evaluate and investigate the performance timings of the render application and GPU card, as well as the details of which part of the image was rendered in each task.

Problems to be explored:

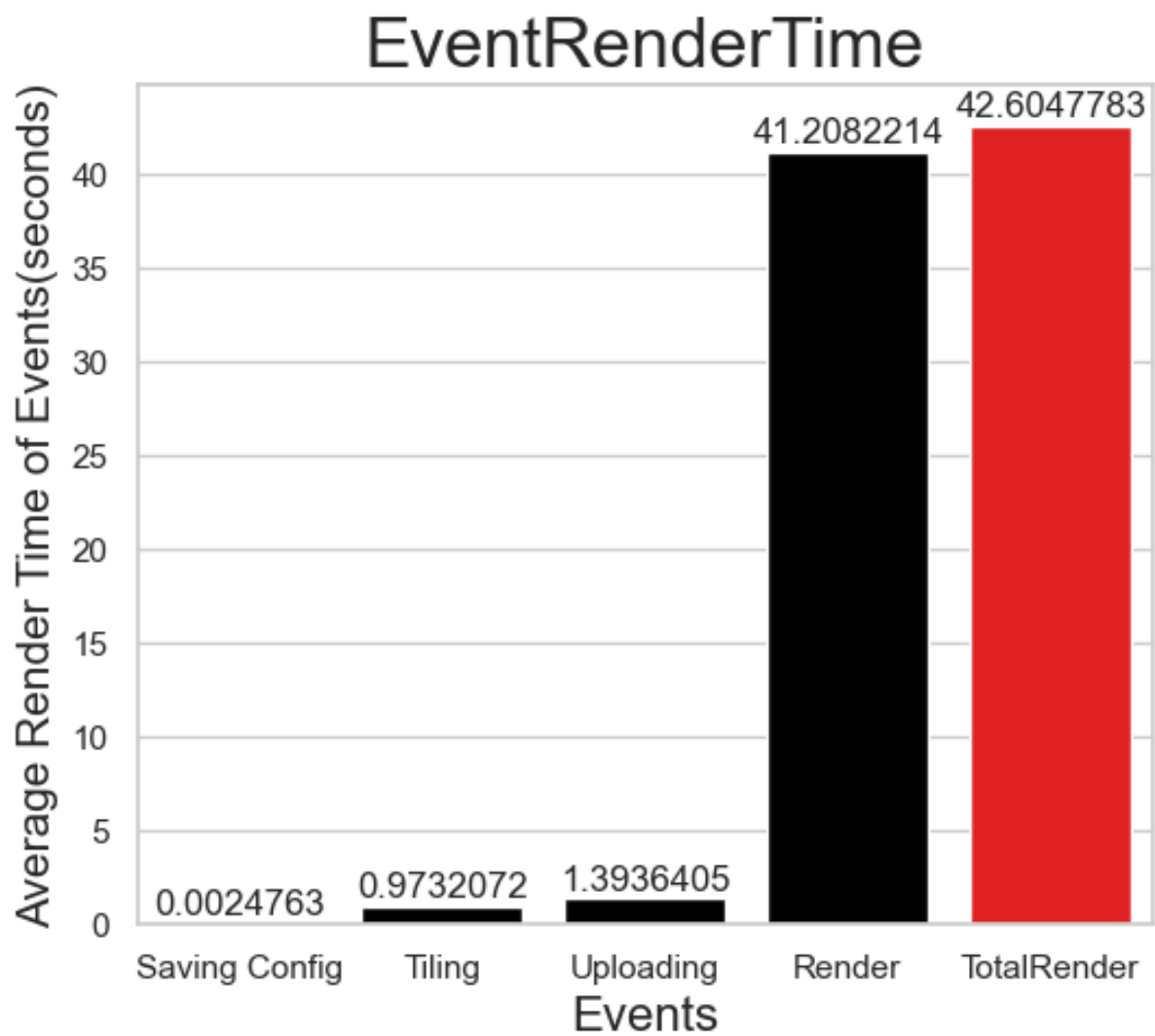
- Assessing the event types that dominate task runtimes.
- Discovering the relationship between GPU metrics.
- Identification of serial numbers of GPU with least performance.
- Interplay between GPU Temperature and Power Consumption.
- Variation in Memory Utilization Percentage of the GPU with GPU Temperature.
- Event Runtime for each co-ordinate of the Rendered Tile for level 8.

The data must first be understood, then cleaned and preprocessed before performing exploratory data analysis, which is then performed and visualized. This analysis will aid in the improvement of the rendering process. All three application-checkpoint.csv, gpu.csv, and task-x-y.csv files, as well as Jupyter Notebook and GitHub, were used as resources.

The study's findings provide information on how to improve the rendering process by decreasing Event Render Time and increasing GPU performance. Reduced render event time can improve rendering efficiency and focusing on low performing GPU cards to improve performance can enhance image rendering.

The work done in this project can improve terapixel rendering, but a more in-depth study can be done with better data.

Key Images:



GPU Measure Comparison

