

Assignment4

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- 3d Gaussian Splatting for Scene Reconstruction
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Task 4-1

■ Example 1:

Input: 2 machines and 3 jobs: ($t_j = 1, 2, 3$)

$$T^* = 3$$

- Load Order ($t_j = 1, 2, 3$), $T = 4$
- Load Order ($t_j = 1, 3, 2$), $T = 3$
- Load Order ($t_j = 2, 1, 3$), $T = 4$
- Load Order ($t_j = 2, 3, 1$), $T = 3$
- Load Order ($t_j = 3, 2, 1$), $T = 3$
- Load Order ($t_j = 3, 1, 2$), $T = 3$

$$T_{average} = 3.33$$

$$T_{average}/T^* = 1.11$$

■ Example 2:

Input: 3 machines and 7 jobs: ($t_j = 1, 1, 1, 1, 1, 1, 3$),

$$T^* = 3$$

Ignore order of job with load 1

- Load Order ($t_j = 3, 1, 1, 1, 1, 1, 1$), $T = 3$
- Load Order ($t_j = 1, 3, 1, 1, 1, 1, 1$), $T = 3$
- Load Order ($t_j = 1, 1, 3, 1, 1, 1, 1$), $T = 3$
- Load Order ($t_j = 1, 1, 1, 3, 1, 1, 1$), $T = 4$
- Load Order ($t_j = 1, 1, 1, 1, 3, 1, 1$), $T = 4$
- Load Order ($t_j = 1, 1, 1, 1, 1, 3, 1$), $T = 4$
- Load Order ($t_j = 1, 1, 1, 1, 1, 1, 3$), $T = 5$

$$T_{average} = 3.7, T_{average}/T^* = 1.23$$

Task 4-2

- Example 1:

Input: 3 machines and 7 jobs: $(t_j = 1, 1, 1, 1, 1, 1, 3)$, $T^* = 3$

- From the previous example, $T_{\text{average}} = 3.7$, and T_{best} will happen when the job with load 3 is assigned to machine **without any task**.
- In sorted order, the job with load 3 is the first job, which will **always be assigned** to the first machine, which means $T_{\text{Sorted}} = 3$.
- Thus, $T_{\text{average}}/T_{\text{Sorted}} = T_{\text{average}}/T^* = 1.23$