

PCOG Yearly Team Meeting - 14th December 2020

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What I am doing

- A survey on **“The driving feature and factor of deep learning workload influencing the scheduling in a GPU cluster”**
- **Identify the features and factors** that have been studied in the previous publication.
- **Categorize and summarize** how they work and impact on scheduler.
- **Define feature and factor which has been lacking.**

WHAT I am interested

- **Focused on:**

1. Deep Learning workload and particular in training stage
2. Scheduling in GPU cluster

- **Motivations:**

1. Many applications involved DL to empower product
2. The jobs has variation (i.e., number of training data, complexity, and initial epoch defining)
3. The diversity of existing applications of deep learning causes the difference of resource utilization

WHAT I am interested (cont.)

- **Objective:**

1. To **accumulate the features and factors** of DL job that influences to the scheduling in a GPU cluster.
2. To **indicate the dominant features and factors** of DL training job.
3. To **examine the features or factors** that have been **lacking**.

WHY I am interested

- **The resource is limited available**, BUT an achievement of DL application has a trade-off with the increasing complexity of the model and the amount of training data.
- **There has not been recent comprehensive survey** of the dominant factors of DL characteristic which can influence the scheduler.
- **Some description of DL jobs** (i.e. processing time and convergence time) cannot know in advance.

What I have done

Thanapol, P., Lavangnananda, K., Bouvry, P., Pinel, F. and Leprévost, F., 2020, **Reducing Overfitting and Improving Generalization in Training Convolutional Neural Network (CNN) under Limited Sample Sizes in Image Recognition**, Proc. of the 5th Inter. Conf. on Information Technology (InCIT2020), 21st - 22nd October, Bangsaen, Thailand, pp. 300-305.



THANK YOU!

for your attention

