MSc(CS) Dissertation Public Seminar

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Title: Machine Comprehension of Court Cases

Speaker: Chen Yunkun

Date & Time: April 23 2020, Thursday, 02:30pm

Zoom meeting link:
https://hku.zoom.us/j/96433939304?pwd=Rnd4czBaTGFmZUVid1dJRFpXK0FlUT09

Meeting ID: 964 3393 9304

Password: 462069

Abstract:

Hong Kong uses Common Law as their legal architecture. Common Law, which is also usually called as "Case Law", means that the judgements are normally guided by previous law cases which are like the current one. Meanwhile, the developing speed of knowledge graph is fast. As a result, it is acceptable to construct a knowledge graph which can be easily used by legal practitioners. However, the law industry currently lacks such knowledge graphs, and it is still a challenging task for people to easily make a satisfying knowledge graph about court cases. When constructing a knowledge graph, there are two important procedures: Named Entity Recognition and Relation Extraction. In this dissertation, we focus on drug trafficking cases and try to find a good approach to construct a knowledge graph. Two models are involved: Separate model and Joint model. The results show that for the legal texts, it is better to separate the procedures of Named Entity Recognition and Relation Extraction into two parts. Based on the experience above, we build a knowledge graph of drug trafficking court cases in Hong Kong. We further build a query system based on the knowledge graph for legal practitioners.

About the Speaker:

Chen Yunkun is currently a full-time MSc(CS) student of the Department of Computer Science in the University of Hong Kong. His supervisor is Prof. Ben Kao.

All are welcome!

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MSc(CS) Dissertation Public Seminar

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Title: Play&Prune for Online Distributed Deep Learning

Speaker: Yu Gao

Date & Time: April 23 2020, Thursday, 02:30pm

Zoom Meeting Link:
https://hku.zoom.us/j/96844383815?pwd=MGJCMmY3UjRuTHFPaGl6RUZxNlFVQT09

Meeting ID: 968 4438 3815

Password: 626609

Abstract:

In this dissertation, I proposed an improvement on the traditional Parameter Server architecture to reduce the synchronization overhead when model training. I found a criterion to determine whether some parameters are trivial that can be skipped in synchronization or be removed from the neural network during the training process.

I introduce an online pruning method called Play & Prune (1) for online model pruning. It reduces the number of parameters without harming the final model performance.

To demonstrate the performance of this improvement, I implement an SSP (2) (Staleness Synchronous Parallel) parameter server system to train a resnet-164 (3) model over cifar-10 dataset. The pruning method I choose is the Network Slimming (4).

The Play & Prune architecture is able to be applied to different kinds of synchronization schemes: BSP (5), ASP, SSP. Meanwhile, the pruning method is also modularized. User can choose any other pruning method they like.

About the Speaker:

Yu Gao is currently a full-time MSc(CS) student of the Department of Computer Science in the University of Hong Kong. His supervisor is Prof. CL Wang.

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MSc(CS) Dissertation Public Seminar

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Title: Optimizing OpenCL Program with Vulkan on Mobile GPU

Speaker: Yan Zhehao

Date & Time: April 23 2020, Thursday, 03:15pm

Zoom Meeting Link:
https://hku.zoom.us/j/96844383815?pwd=MGJCMmY3UjRuTHFPaGl6RUZxNlFVQT09

Meeting ID: 968 4438 3815

Password: 626609

Abstract:

With the breakthroughs of mobile processor chips, mobile GPUs are becoming more powerful in computation, making it possible to port some frameworks and algorithms of general computing to mobile platforms. OpenCL, as an open-source parallel programming standard, has been widely accepted in different cross-platform projects. However, developers often meet with difficulties in exploiting compute power due to the limited support of OpenCL mechanism and the close-sourced driver offered by device manufacturers.

In this work, we focus on using Vulkan, the new low-level graphic and compute API to optimizing the OpenCL programs in cross-platform scenarios. Experiments on several benchmarks have shown an average of 72.8% speedups compared to original OpenCL versions.

About the Speaker:

Yan Zhehao is currently a full-time MSc(CS) student of the Department of Computer Science in the University of Hong Kong. His supervisor is Prof. CL Wang.

All are welcome!

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