

FACULTY MENTOR

An, Cheolhong

PROJECT TITLE

Parallel lossless compression on GPU

PROJECT DESCRIPTION

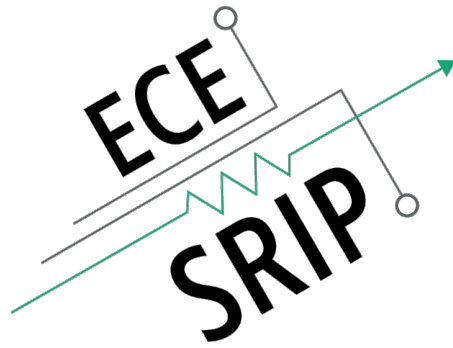
Large scale data processing is required all fields. The huge data must be compressed not only to reduce storage space but also reduce power consumption. To compress and decompress large scale data, the parallel compression is the most important factor. Especially, this project will develop the algorithms on the most powerful parallel processor, GPU.

INTERNS NEEDED

1 MS Student

PREREQUISITES

Candidates must have hands-on experiences with CUDA programming (ECE 285 image and video compression or ECE 285 GPU programming) and compression background.



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PROJECT TITLE

Real-time GPU Database and Interactive Visualization

PROJECT DESCRIPTION

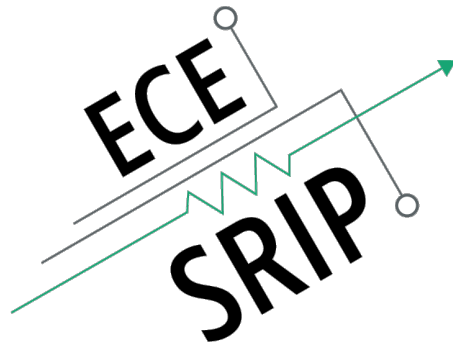
This project will develop SQL processing on GPU and also visualize Its results on GPU. All the operations should be processed on real-time using Nvidia GPU. Target processing data will be adjusted for candidates.

INTERNS NEEDED

2 MS students or 1 MS and 1 BS

PREREQUISITES

Candidates must have hands-on experiences with CUDA programming (ECE 285 GPU programming). Graphics and SQL knowledge are preferred.



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PROJECT TITLE

CNN: Image sensor to color image

PROJECT DESCRIPTION

Build learning network to create color images from image sensor directly. All the camera processing pipeline operation such as white balance, demosaicking, color space correction, color enhancement, etc. will be replace with the deep convolutional neural network.

INTERNS NEEDED

1 MS Student

PREREQUISITES

Candidates are expected to have knowledge of image processing and build CNN for image processing.