

## **HYPERGRAPH PARTITIONING ON GPUS AND IMAGE CLASSIFICATION**

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This project is aimed at building an intelligent piece of software that automatically classifies a set of pictures into multiple categories. Its main contribution is to accelerate a state-of-the-art algorithm known as hypergraph partitioning. Hypergraphs capture similarities among groups of neighboring pictures and help guide classification decisions. Since it takes a lot of computations to partition a hypergraph, this project seeks to accelerate the partition process using a commodity hardware known as Graphics Processing Units (GPUs). Originally designed for graphics-intensive applications, GPUs are known to deliver good performance at an affordable price range. The poster discusses how the project addresses the challenges in adapting the partitioning algorithm to GPUs. In particular, the massively parallel nature of GPUs is highlighted: a given task must be divided into small independent pieces in order for that task to perform well on GPUs.