




# GPU implementation of HGCal 2D Clustering



## Starting Point

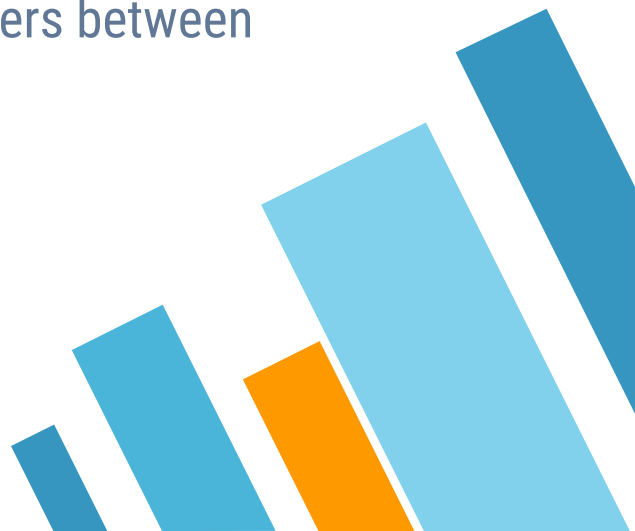
1. Latest **CPU kdTree-based** version of HGCal 2D clustering algorithm in CMSSW\_10\_6\_0\_pre2
2. Input data structure -- 2D histogram
3. Code of this effort from previous Hackathon

## Goal

1. CPU histogram-based clustering
  2. GPU histogram-based clustering
  3. Get same result as **CPU kdTree-based** clustering
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# Today

1. Established starting point: setup and run.
  2. Checked the result from existing code from previous Hackathons. Discrepancy in density and clusters between CPU kdTree-based
  3. Started to develop our functions
    - a. `calculateDistanceToHigher`
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# Tomorrow

1. Complete `calculateLocalDensity` for CPU and GPU histogram-based functions. Fully synchronized with CPU kdTree-based one.
  2. Work on `calculateDistanceToHigher` CPU and GPU histogram-based functions. And compare the results with CPU kdTree-based one
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