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Reconstruction in MicroBooNE Using OpenCV Image Processing

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Liquid Argon Time Projection Chambers (LArTPCs) such as MicroBooNE provide excellent calorimetric information and image quality resolution. To take full advantage of these benefits, MicroBooNE is developing a high efficiency, high purity reconstruction chain. OpenCV is an open source computer vision library with functions to aid in pattern recognition and image processing. Such software has the potential to improve the current state of MicroBooNE's reconstruction through improved charge clustering, track and shower start point finding, and so on. Successful implementation of this chain will both improve MicroBooNE analyses and potentially aid the next generation of LArTPCs. Here I will discuss the results of an initial implementation of this pattern recognition technique in MicroBooNE's pi0 reconstruction efforts.

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