

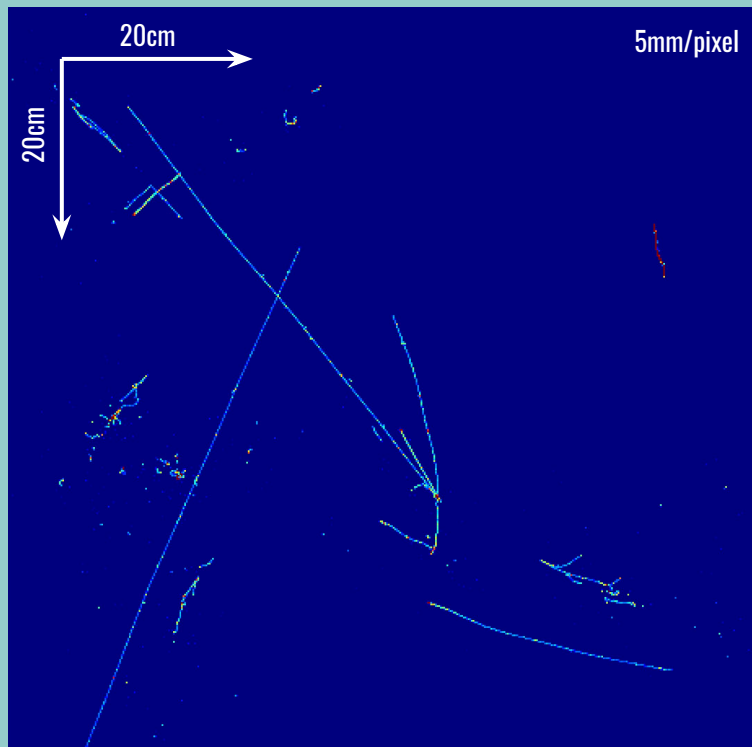
# Applying Deep Neural Network Techniques for LArTPC Data Reconstruction

Laura Domine (Stanford)  
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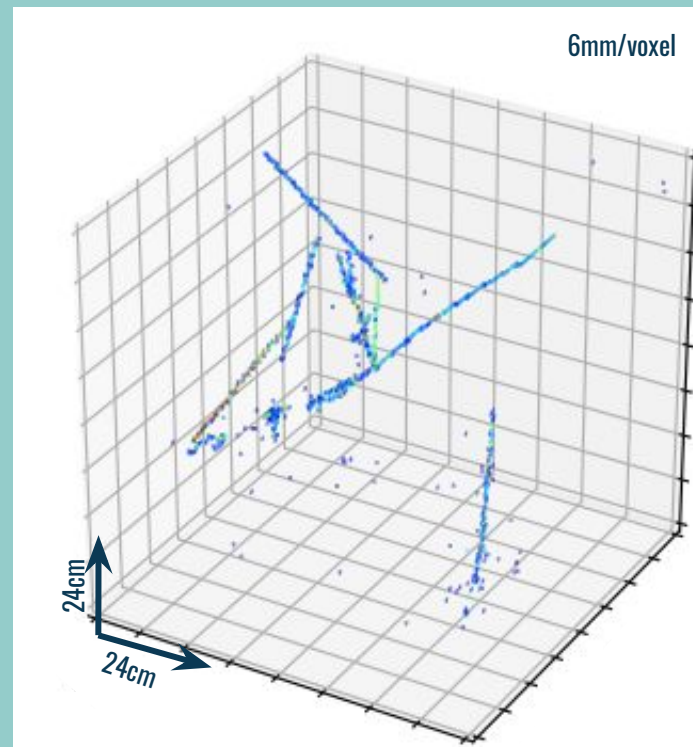
**GOAL** Develop a full 2D & 3D reconstruction chain for **Liquid Argon Time Projecting Chamber (LArTPC)** detectors using **deep learning**

**DATASET** Trained on DeepLearnPhysics open LArTPC simulation samples 2D & 3D

2D Analysis



3D Analysis

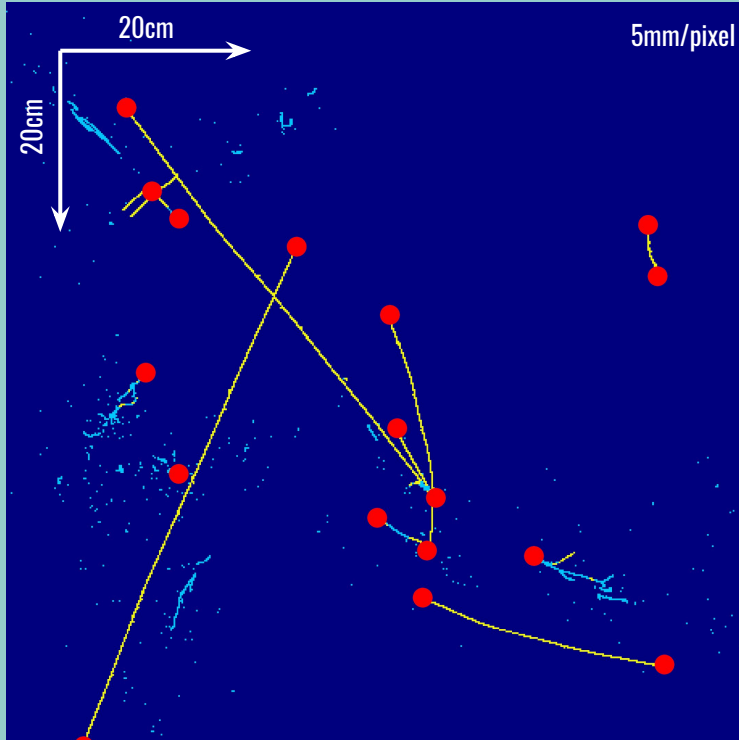


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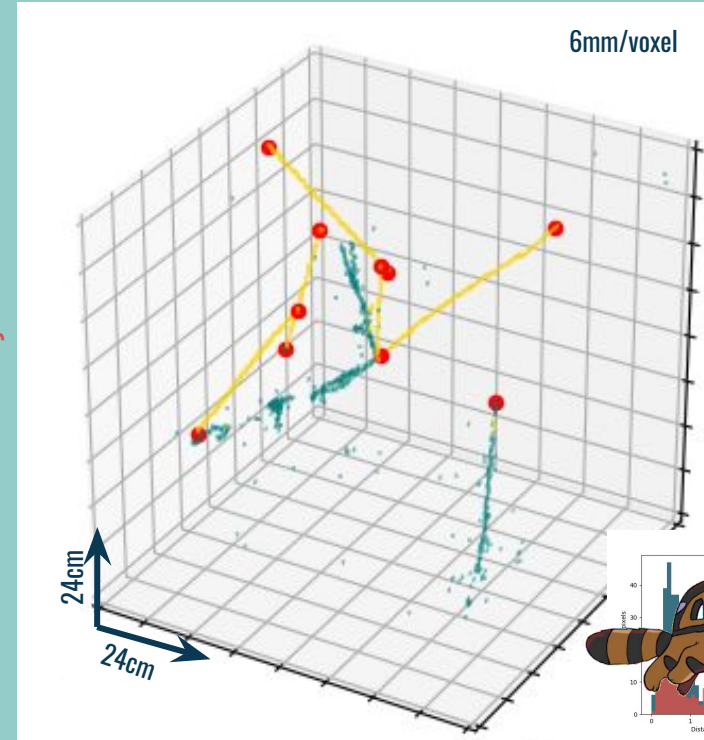
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**RESULTS** First steps demonstration: **semantic segmentation** (pixel-wise classification as track/shower with UResNet) and **track/shower edge point detection** (Pixel Proposal Network) with spatial resolution at pixel-level

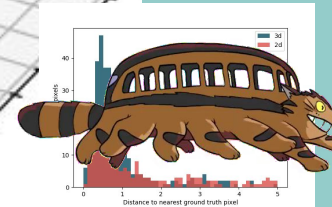
2D Analysis



3D Analysis



**MORE** on the poster: metrics, data validation, etc



See also  
[JINST P03011.12](#)