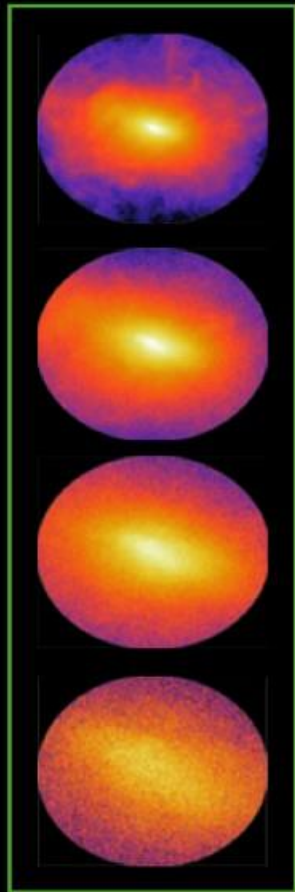
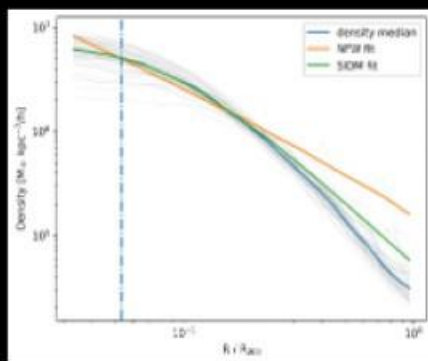
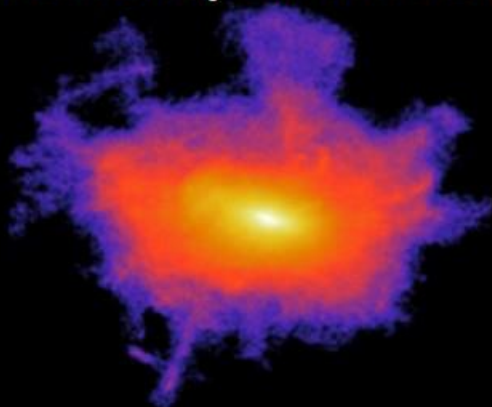
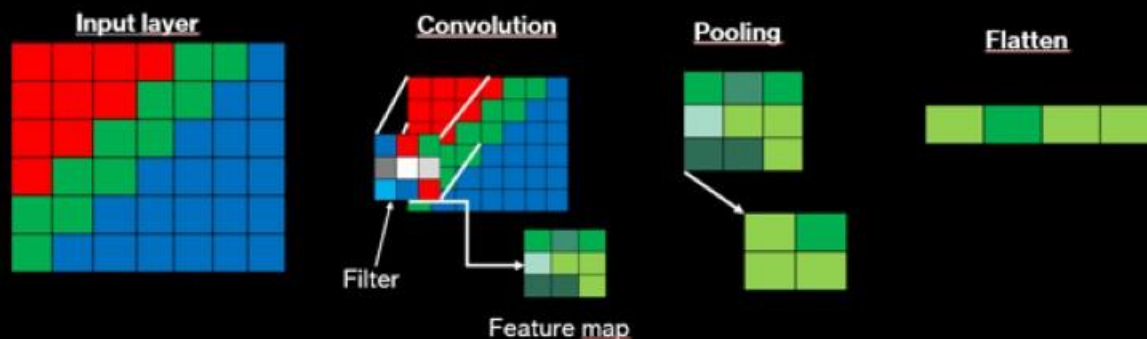


Exploring the Nature of Dark Matter with Cosmological Simulations and Machine Learning

Exploration through N-body simulations (CDM and SIDM)



Classification using a Convolutional Neural Network



Results of Classification

Different predictive power based on test data ranges, depending on the cropping and resolution of simulation

Simulation	Accuracy
0.5R200 crop (128 ³)	83.6%
0.25R200 crop (128 ³)	87.1%
0.1R200 crop (128 ³)	86.6%
0.5R200 crop (512 ³)	99.3%
0.25R200 crop (512 ³)	100%
0.1R200 crop (512 ³)	100%