

Data Preprocessing

UAV Footage Input

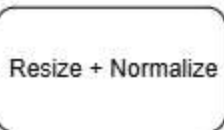


Image Processing

Dataset Splitting

- Training (70%)
- Validation (20%)
- Testing (10%)
- Maintain class balance

Flips | Rotation | Brightness | Crop

Data Augmentation]

YOLOv11 Model Input

YOLO Label Format

Annotation Standardization

Feature
Extraction
(Backbone)

Feature
Aggregation
(Neck)

Detection
Head

Shared Feature Maps

Classification

Box Refinement

Output: Bounding Boxes + label

