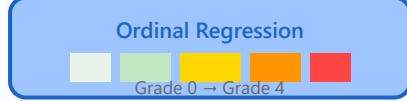
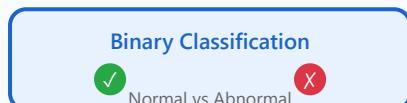


Classification Tasks

Medical Image Classification Pipeline

Classification Types



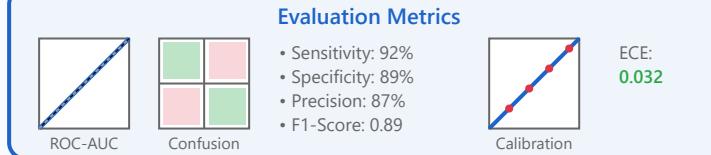
Processing Pipeline



Loss Functions



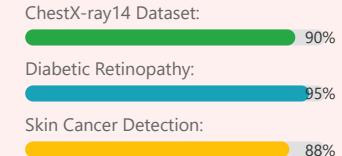
Evaluation Metrics



Uncertainty Estimation

- Monte Carlo Dropout
 - Multiple forward passes
 - Deep Ensembles
 - Combine predictions
- ✓ Know when uncertain

Real Performance



Disease Detection

Binary or multi-class classification. Pneumonia detection, cancer screening, retinopathy grading

Multi-label Classification

Multiple diseases per image. Thoracic diseases (14 classes in ChestX-ray14 dataset)

Ordinal Regression

Ordered categories (disease severity). Preserves ordering constraints in loss function

Uncertainty Estimation

Confidence in predictions. Monte Carlo dropout, ensembles, or Bayesian approaches

Ensemble Methods

Combining multiple models. Improves robustness and calibration of predictions