

Pathology Slide Analysis: WSI Analysis

WSI (Whole Slide Imaging): Gigapixel-level pathology slides **divided into patches** for tissue classification and lesion detection

1. Slide Scanning

- High-resolution digital scanning (20x, 40x)
- Images of tens of GB in size
- Multi-resolution pyramid structure

2. Patch Extraction

- 256x256 or 512x512 patch division
- Tissue region detection (background removal)
- Overlap setting via stride adjustment

3. Patch-level Analysis

- Feature extraction per patch using CNN/ViT
- Tissue type classification (normal/cancer/inflammation, etc.)
- Multiple Instance Learning (MIL)

4. Slide-level Integration

- Patch prediction aggregation (mean, max, attention)
- Whole slide diagnosis (cancer grade, prognosis)
- Heatmap visualization

Cancer Detection & Grade Classification

Lymph Node Metastasis Detection

Ki-67 Proliferation Index Measurement