

Reference	Study objective	Description	Model	Results
Kanavati, 2021 [13]	Tumor classification	Classify transbronchial biopsies into adenocarcinoma, squamous cell carcinoma, small cell carcinoma and non-neoplastic	EfficientNet-B1	AUC 0.94-0.99
Yang, 2021 [14]	Tumor classification	Six-category classification for main types of lung cancer and tuberculosis, organizing pneumonia and normal lung	EfficientNet-B5	AUC 0.918-0.978
Iizuka, 2020 [15]	Tumor classification	Classification of gastrointestinal biopsies into adenocarcinoma, adenoma and non-neoplastic in both stomach and colon	Inception v3	AUC 0.96-0.99
Byeon, 2022 [16]	Tumor classification	Six-class classification for main types of benign colonic polyps as well as colorectal cancer	DenseNet-161	Accuracy 97.3%
Bulten, 2020 [9]	Tumor classification	Classification of prostate biopsies into benign versus malignant and Gleason grading	U-Net	AUC 0.99 for benign versus malignant
Bulten, 2021 [17]	Tumor classification	Agreement of pathologists when grading prostate cancer with AI	U-Net	Cohen's kappa 0.799 vs 0.872 with AI
Lu, 2021 [18]	Tumor classification	Predicting origins in metastases of unknown primaries	ResNet encoder and attention pooling	Top-3 agreement of 82%
Wu, 2023 [23]	Biomarker quantification	HER2 scoring	CNN	Accuracy 0.93 with AI vs 0.8 without AI
Wang, 2021 [24]	Biomarker quantification	PD-L1 scoring in breast cancer	Linknet	Concordance improved from 0.674 to 0.950
Naso, 2021 [26]	Biomarker quantification	PD-L1 scoring in NSCLC	Random trees classifier	Concordance of 0.925 in automated scoring
Liu, 2021 [27]	Biomarker quantification	PD-L1 scoring in lung squamous cell carcinoma	Res50-UNet	MAE 0.865 Pearson correlation 0.9436
Li, 2022 [28]	Biomarker quantification	Ki-67 scoring	Inception v3 and ResNet	Intra-group correlation coefficient 0.905
Fulawka, 2022 [29]	Biomarker quantification	Ki-67 scoring	DenseNet and fuzzy-set interpretation	MAE 0.024
Xu, 2018 [32]	Survival prediction	WSI risk and survival prediction for bladder, breast carcinomas and glioblastoma	Graph-based CNNs	MAEs: 123.2 for bladder, 167.5 for breast, 303.3 for glioblastoma

Zhu, 2017 [33]	Survival prediction	Survival analysis from WSI patch clustering	CNN	C-index 0.510-0.703
Vale-Silva, 2021 [34]	Survival prediction	Survival prediction using WSI, clinical data, CNV, gene and miRNA expression	ResNet-50	Time-dependent C-indexes 0.554-0.988
Coudray, 2021 [35]	Prediction of molecular alterations from H&E	Predict common mutations in NSCLC	Inception v3	AUC 0.733-0.856
Wagner, 2023 [36]	Prediction of molecular alterations from H&E	Prediction of MSI in colorectal cancer	Transformer	AUC 0.99 NPV 0.99
Fremond, 2023 [37]	Prediction of molecular alterations from H&E	Prediction of MMR, POLE and p53 alterations in endometrial cancer	Attention-based	AUROC 0.844-0.928
Chen,2020 [38]	Prediction of molecular alterations from H&E	Prediction of common mutations in HCC	Inception v3	AUC 0.71-0.89
Jiang, 2021 [39]	Prediction of molecular alterations from H&E	Prediction of IDH mutation status in low-grade gliomas	ResNet-18	AUC 0.667
Yan, 2023 [40]	Prediction of molecular alterations from H&E	Prediction of common mutations in bladder cancer	Hierarchical deep multi-instance learning	AUC > 0.83
Qu, 2021 [41]	Prediction of molecular alterations from H&E	Prediction of common mutations in breast cancer	ResNet-101	AUC 0.729-0.852
Wang, 2021 [42]	Prediction of molecular alterations from H&E	Prediction of germline BRCA mutations	ResNet	AUC 0.766
Bourgade, 2023 [43]	Prediction of molecular alterations from H&E	Prediction of somatic BRCA mutations	ResNet	AUC 0.681
Dolezal, 2021 [44]	Prediction of molecular alterations from H&E	Prediction of BRAF-RAS score in thyroid neoplasms	Xception	AUC 0.97-0.99
Kim, 2022 [45]	Prediction of molecular alterations from H&E	Prediction of BRAF mutation in melanoma	Inception v3 and pathomic features	AUC 0.89
Jain, 2020 [46]	Prediction of molecular alterations from H&E	Prediction of TMB high or low status in lung adenocarcinoma	Inception v3	AUC 0.92