

Appendix 1 Recommended system requirements

Table S1 Recommended hardware requirements for AIMS are as follows

Name	Requirement
CPU	Intel Core i5-10400F 2.9 GHz 6-Core Processor and higher
GPU	NVIDIA RTX 2070 (8 GB) and higher
Memory	≥32 GB
Storage	≥100 GB
Pytorch	1.7.1 or higher
CUDA runtime library	10.1 or higher

Appendix 2 Patient characteristics

Table S2 Demographics and patient characteristics in section “Multiphase analysis for ccRCC Fuhrman grading”

Characteristic	All patients (n=187)	Training cohort (n=133)	Test cohort (n=54)	P value
Gender				0.269
Male	127	91	36	
Female	60	42	18	
Fuhrman grade				0.339
Low-grade	135	95	40	
high-grade	52	38	16	
Age (mean ± STD, year)	58.80±13.88	59.84±13.65	58.15±11.32	0.249
Tumor size (mean ± STD, mm)	60.18±30.43	59.32±27.30	62.12±34.58	0.430

Table S3 Demographics and patient characteristics in section “Multiregion analysis for ccRCC Fuhrman grading”

Characteristic	All patients (n=177)	Training cohort (n=107)	Test cohort (n=70)	P value
Gender				0.478
Male	117	73	44	
Female	60	34	26	
Fuhrman grade				0.304
Low-grade	107	65	42	
High-grade	70	42	28	
Age (mean ± STD, year)	59.93±12.02	58.12±11.34	62.48±12.95	0.294
Tumor size (mean ± STD, mm)	61.27±31.37	64.34±29.34	56.65±33.38	0.441

Table S4 Demographics and patient characteristics in section “Multimodality analysis for prostate cancer Gleason grading”

Characteristic	Total number (n=206)	Training cohort (n=164)	Test cohort (n=42)	P value
Pathology				0.025
csPCa	89	75	14	
ncsPCa	117	89	28	
Age (years)	70.87±7.34	71.34±7.21	69.11±6.72	0.340