

Supplementary Table 1: Database Search Strategies

Database	Search String	Limits Applied	Date Last Searched
PubMed/MEDLINE	("artificial intelligence"[Title/Abstract] OR "machine learning"[Title/Abstract] OR "deep learning"[Title/Abstract] OR "neural network*"[Title/Abstract] OR "explainable AI"[Title/Abstract] OR "natural language processing"[Title/Abstract] OR "NLP"[Title/Abstract] OR "radiomics"[Title/Abstract] OR "reinforcement learning"[Title/Abstract] OR "digital twin*"[Title/Abstract] OR "multimodal model*"[Title/Abstract]) AND ("chronic kidney disease"[Title/Abstract] OR CKD[Title/Abstract] OR "renal insufficiency"[Title/Abstract] OR "kidney failure"[Title/Abstract] OR "end-stage renal disease"[Title/Abstract] OR ESRD[Title/Abstract] OR dialysis[Title/Abstract] OR "kidney transplantation"[Title/Abstract] OR "renal transplantation"[Title/Abstract] OR "acute kidney injury"[Title/Abstract] OR AKI[Title/Abstract] OR "kidney fibrosis"[Title/Abstract])	Humans; English language; Publication years: 2019–2025	September 30, 2025
Embase	('artificial intelligence' OR 'machine learning' OR 'deep learning' OR 'neural network*' OR 'explainable artificial intelligence' OR 'natural language processing' OR 'radiomics' OR 'reinforcement learning' OR 'digital twin*' OR 'multimodal model*') AND ('chronic kidney disease' OR CKD OR 'renal insufficiency' OR 'kidney failure' OR 'end stage renal disease' OR ESRD OR dialysis OR 'kidney transplantation' OR 'renal transplantation' OR 'acute kidney injury' OR AKI OR 'kidney fibrosis')	Humans; English language; Publication years: 2019–2025	September 30, 2025
Web of Science Core Collection	TS=("artificial intelligence" OR "machine learning" OR "deep learning" OR "neural network*" OR "explainable AI" OR "natural language processing" OR NLP OR radiomics OR "reinforcement learning" OR "digital twin*" OR "multimodal model*") AND TS=("chronic kidney disease" OR CKD OR "renal insufficiency" OR "kidney failure" OR "end-stage renal disease" OR ESRD OR dialysis OR "kidney transplantation" OR "renal transplantation" OR "acute kidney injury" OR AKI OR "kidney fibrosis")	Document type: Article; Language: English; Years: 2019–2025	September 30, 2025
Scopus	TITLE-ABS-KEY("artificial intelligence" OR "machine learning" OR "deep learning" OR "neural network*" OR "explainable AI" OR "natural language processing" OR NLP OR radiomics OR "reinforcement learning" OR "digital twin*" OR "multimodal model*") AND TITLE-ABS-KEY("chronic kidney disease" OR CKD OR "renal insufficiency" OR "kidney failure" OR "end-stage renal disease" OR ESRD OR dialysis OR "kidney transplantation" OR "renal transplantation" OR "acute kidney injury" OR AKI OR "kidney fibrosis")	Language: English; Publication years: 2019–2025	September 30, 2025

Note: Search strings were adapted to the syntax and indexing structure of each database. Controlled vocabulary terms (MeSH in PubMed and Emtree in Embase) were used where applicable and supplemented with free-text keywords to maximize sensitivity. Minor variations in retrieval may occur due to ongoing database updates.