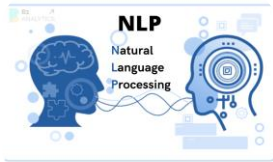


ARTIFICIAL INTELLIGENCE IN ENDODONTICS

'Artificial intelligence (AI) is transforming the diagnostic methods and treatment approaches in the constantly evolving field of endodontics.'



Natural language processing



Machine learning



Convolutional neural network



Robotics

AI in endodontics: Paradigm shift in diagnosis

Machine Learning in Diagnosis:

Diagnocat: AI software for interpreting CBCT scans and radiographs, detecting apical periodontitis, root fractures, and anomalies with high accuracy.

VideaHealth: AI tool for early diagnosis of periapical diseases, assisting endodontists by analyzing radiographs.

AI in endodontics: Paradigm shift in file detection

Endodontic File Detection:

DentDetect: AI tool that identifies endodontic files on radiographs, distinguishing between stainless steel and NiTi files (prototype stage).

EndoPilot: AI-driven motor system that recognizes file sizes and types for optimizing canal preparation.

AI in endodontics: Paradigm shift in pathology detection

Automated Pathology Detection:

Second Opinion (Pearl AI): AI system for detecting cysts, granulomas, and resorptions in real-time diagnostics.

Apteryx XVWeb: Cloud-based AI software for early detection of periapical pathologies using 2D/3D imaging.



Benefits of AI in Endodontics

Increased diagnostic accuracy

Shorter treatment times

Improved patient outcomes

Challenges and Limitations

Data Privacy

Model Generalizability

Clinical Acceptance

Conclusion: "Ultimately, as AI continues to evolve, its integration into endodontics holds the promise of enhancing clinical efficiency, accuracy, and patient care, marking a new era of innovation and precision in dental practice."