(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :18/12/2025

(21) Application No.202511128385 A

(43) Publication Date : 26/12/2025

(54) Title of the invention : A SYSTEM FOR REAL-TIME FRACTAL COMPLEXITY DIAGNOSIS IN MEDICAL IMAGING

(51) International classification	:G06T 7/00, A61B 5/055, G06T 5/00, G06T 7/11, A61B 6/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
To a diagnostic system in the field of medical imaging that integrates real-time fractal analysis to assess tissue complexity. The system comprises an image acquisition module configured to capture digital images from various diagnostic modalities, a pre-processing module that performs noise reduction, contrast normalization, and region-of-interest segmentation, and a fractal complexity analysis engine including a boundary irregularity analyzer an internal texture analyser and a multi-scale structure detector. A complexity score generator integrates outputs from these sub-modules to compute a composite tissue complexity index, which is then rendered via a diagnostic interpretation and visualization module that produces real-time overlays. A real-time integration module synchronizes these operations, thereby enhancing diagnostic accuracy and facilitating advanced clinical assessments.

No. of Pages : 20 No. of Claims : 10