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Patent Search

Invention Title	"AI BASED METHOD FOR MEASURING INTRA-SITE HETEROGENEITY IN A TUMOR USING MAGNETIC RESONANCE IMAGING"
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Inventor

Name	Address	Country
Sushant Bhushan	Head of Analytics Delivery, Data and Analytics, Noida, Uttar Pradesh, India - 201303	India
Dr.Suresh.R	Associate Professor, Dentistry, Meenakshi Medical College Hospital & Research Institute Enathur, Kanchipuram, Tamil Nadu, India - 631552	India
Poonam Mithailal Gupta	Senior Software Engineer, Stevens Institute of Technology, hoboken, NJ,USA - 08854	U.S.A.
Akhil Maheshwari	Assistant Professor, Department of Civil Engineering, Sangam University, Bhilwara, NH79, Atoon, Rajasthan, Bhilwara, India - 311001	India
Kajal D. Jaisinghani	Asst. Professor, B. K. Birla College (Autonomous), Kalyan West, Near Prem Auto B. K. Birla College Road, Maharashtra, India - 421301	India
Gurpreet Singh	Research scholar, Computer science department, Chandigarh college of engineering and technology, sector 26, chandigarh, India -160036	India
Dr Valli Madhavi Koti	Principal, Computer Science GIET Degree College, NH-16, Chaitanya Knowledge, Rajahmundry, Andhra Pradesh, India - 533296	India
V S S S Kumar Gollakota	Asst. Prof, Computer science, GIET Degree College, NH-16, Chaitanya knowledge, Rajahmundry, Andhra Pradesh, India- 533106	India
Meduri Sridhar Sarma	Asst Prof, Computer Science, GIET Degree College, NH 16 Chaitanya Knowledge city, Rajahmundry, Andhra Pradesh, India	India
Dr Puthalapattu Reddy Prasad	Associate Professor, Chemistry, Institute of Aeronautical Engineering, Hyderabad, Telangana, India - 500 043	India
Vinod D. Rajput	Asst. Professor, B. K. Birla College (Autonomous), Kalyan West, Near Prem Auto B. K. Birla College Road, Kalyan Maharashtra, India - 421301	India

Applicant

Name	Address	Country
Sushant Bhushan	Head of Analytics Delivery, Data and Analytics, Noida, Uttar Pradesh, India - 201303	India
Dr.Suresh.R	Associate Professor, Dentistry, Meenakshi Medical College Hospital & Research Institute Enathur, Kanchipuram, Tamil Nadu, India - 631552	India
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Gurpreet Singh	Research scholar, Computer science department, Chandigarh college of engineering and technology, sector 26, chandigarh, India -160036	India
Dr Valli Madhavi Koti	Principal, Computer Science GIET Degree College, NH-16, Chaitanya Knowledge, Rajahmundry, Andhra Pradesh, India - 533296	India
V S S S Kumar Gollakota	Asst. Prof, Computer science, GIET Degree College, NH-16, Chaitanya knowledge, Rajahmundry, Andhra Pradesh, India-533106	India
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Vinod D. Rajput	Asst. Professor, B. K. Birla College (Autonomous), Kalyan West, Near Prem Auto B. K. Birla College Road, Kalyan Maharashtra, India - 421301	India

Abstract:

An AI based method for measuring intra-site heterogeneity in a tumor using magnetic resonance imaging. A plurality of digitizers, each configured to receive and digi corresponding broadband electronic signal from a respective antenna at a rate of at least one gigasample per second to produce a broadband digitized electronic sig position changing means is a means for moving the position of the bed in the longitudinal direction with respect to the static magnetic field generating means. Comp habitat variations from the spatial map of the tumor in the subject to one or more controls to predict the severity of the tumor. At least one second B 0 magnet is con generate a second magnetic field to contribute to the B 0 of the magnetic resonance imaging system. magnetic field B 0 at least one second magnet includes a secon permanent magnet ring.

Complete Specification

Technical Field

[0001]   The embodiments herein generally relate to AI based method for measuring intra-site heterogeneity in a tumor using magnetic resonance imaging.
Description of the Related Art

[0002]   There are more than 18 million cancer cases and over 8 million people die of cancer around the world each year. The global market for cancer therapies is projected to reach US$220. 5 billion by 2025. Despite tremendous efforts to cancer therapy over the past decades, overall cancer mortality remains high and has no changed substantially. The cancer therapy is mainly challenged by heterogeneity that is a hallmark of tumors and has a crucial role in the outcome of the malignanc because it strongly impacts diagnosis at the genetic and molecular level and challenges the design of effective therapies. There are two types of heterogeneity: inter and intra-tumor heterogeneity. Specially, intra-tumor heterogeneity closely associates with cancer progression and contributes to cancer drug resistance, leading to failure of many new therapies to deliver meaningful survival benefits and the increase in the health economic cost of therapeutic development. Therefore, the understanding of intra-tumor heterogeneity is very important for both research on fundamental mechanisms of tumor evolution and clinical practices of cancer tre

[0003]   Currently, the methods for identifying intra-tumor heterogeneity includes invasive surgical biopsy and minimally invasive or non-invasive methods. A DNA sequence based on biopsy is a gold standard to identifying the intra-tumor heterogeneity. The intra-tumor heterogeneity is performed by measuring genetic inform tumor sample that are extracted from biopsy tissue. Systems and/or methods for measuring the intra-tumor heterogeneity from invasive surgery specimens .

[0004]   In medical magnetic resonance imaging, a nuclear spin of a subject placed in a static magnetic field is magnetically excited with a high-frequency signal hav Larmor frequency, and an FID (free induction decay) signal or echo signal generated by this excitation is used. This is an imaging method based on obtaining an ima

View Application Status

Department of Industrial Policy and Promotion
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