(12) PATENT APPLICATION PUBLICATION (21) Application No.202241007704 A

(19) INDIA

(22) Date of filing of Application :14/02/2022 (43) Publication Date : 25/02/2022

(54) Title of the invention : THYROID SEGMENTATION USING RBF NEURAL NETWORK

(71)Name of Applicant :
  1) Dr. VIJAYALAKSHMI B
   Address of Applicant :ASSISTANT PROFESSOR/ MATHEMATICS, PG & RESEARCH DEPARTMENT OF MATHEMATICS, GOVERNMENT ARTS COLLEGE, C.MUTLUR,(DEPUTED FROM ANNAMALAI UNIVERSITY) CHIDAMBARAM, INDIA ----------- -----------
  2)SREENIVASULA REDDY T
  3)SARAVANAN P
  4)MATHIVANAN P
  5)VIJAYAKUMAR K
  6)PREMKUMAR K
  7)SUDHAAKAR K
Name of Applicant : NA
Address of Applicant : NA
(72)Name of Inventor :
  1) Dr. VIJAYALAKSHMI B
Address of Applicant :ASSISTANT PROFESSOR/ MATHEMATICS, PG & RESEARCH DEPARTMENT OF MATHEMATICS, GOVERNMENT ARTS COLLEGE, C.MUTLUR,(DEPUTED FROM ANNAMALAI UNIVERSITY) CHIDAMBARAM, INDIA ----------- -----------
  2)SREENIVASULA REDDY T
Address of Applicant :ASSISTANT PROFESSOR/ COMPUTER SCIENCE, DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATHI, IND ----------- -----------
  3)SARAVANAN P
Address of Applicant :ASSOCIATE PROFESSOR/ INFORMATION TECHNOLOGY, DEPARTMENT OF INFORMATION TECHNOLOGY, MANAKULA VINAYAGAR INSITUTE OF TECHNOLOGY, PUDUCHERRY, INDIA ----------- -----------
  4)MATHIVANAN P
Address of Applicant :ASSISTANT PROFESSOR/ INFORMATION TECHNOLOGY, DEPARTMENT OF INFORMATION TECHNOLOGY, MANAKULA VINAYAGAR INSITUTE OF TECHNOLOGY, PUDUCHERRY, INDIA ----------- -----------
  5)VIJAYAKUMAR K
Address of Applicant :ASSISTANT PROFESSOR/ INFORMATION TECHNOLOGY, DEPARTMENT OF INFORMATION TECHNOLOGY, MANAKULA VINAYAGAR INSITUTE OF TECHNOLOGY, PUDUCHERRY, INDIA ----------- -----------
  6)PREMKUMAR K
Address of Applicant :ASSISTANT PROFESSOR/ INFORMATION TECHNOLOGY, DEPARTMENT OF INFORMATION TECHNOLOGY, MANAKULA VINAYAGAR INSITUTE OF TECHNOLOGY, PUDUCHERRY, INDIA ----------- -----------
  7)SUDHAAKAR K
Address of Applicant :ASSOCIATE PROFESSOR/ COMPUTER SCIENCE, DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, LORD VENKATESHWARAA ENGINEERING COLLEGE, PULIYAMBAKKAM, INDIA ----------- -----------

(51) International classification :G06T0007000000, A61B0006000000, A61B0008080000, G06T0007110000, A61B0005000000

(86) International Application No :NA
    Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
    Filing Date :NA

(62) Divisional to Application Number :NA
    Filing Date :NA

(57) Abstract :
Thyroid segmentation using RBF neural network This paper proposes a complete solution to estimate the volume of the thyroid gland directly from US images. Physicians usually diagnose the pathology of the thyroid gland by its volume. Even if the thyroid glands are found and the shapes are handmarked from ultrasound (US) image, most physicians still depend on computed tomography(CT) images which are expensive and very time consuming. Patients are exposed to high radiation when obtaining CT images . In contrast, US imaging does not require ionizing radiation and is relatively inexpensive . US imaging is thus one of the most commonly used auxiliary tools in clinical diagnosis . The radial basis function neural network is used to classify blocks of the thyroid gland. The integral region is acquired by applying a specific region-growing method to potential points of interest. The parameters for evaluating the thyroid volume are estimated using a particle swarm optimization algorithm. Experimental results of the thyroid region segmentation and volume estimation in US images show that the proposed approach is very promising.

No. of Pages : 14 No. of Claims : 4