# Fully Automated Multi-Organ Segmentation From Medical Imaging

Tech ID: 33455 / UC Case 2020-303-0

## BRIEF DESCRIPTION

A comprehensive method for automated multi-organ segmentation based on deep fully convolutional networks and adversarial training, achieving superior results compared to existing techniques.

## APPLICATIONS

Improvements in medical imaging technology

Integration into AI-based diagnostic systems

Enhancements in research applications requiring organ segmentation

## ADVANTAGES

Utilizes fully convolutional networks and adversarial training

Offers a fully automated system, reducing the need for human intervention

Provides superior results, as demonstrated by high Dice metrics

**Problems Solved:**

*Solves the problem of time-consuming and error-prone manual multi-organ segmentation

*Improves upon the accuracy limitations of existing automated methods

## DESCRIPTION

This technology offers a fully-automatic method for multi-chamber segmentation, utilizing deep fully convolutional networks and adversarial training. The system was successfully tested on 20 echocardiograms from 100 patients for training and validation, outperforming state-of-the-art techniques with significantly improved Dice metrics.

## PATENT STATUS

| Country | Type | Number | Dated | Case |
|---|---|---|---|---|
| United States Of America | Issued Patent | 11,651,487 | 05/16/2023 | 2020-303 |

## CONTACT

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## INVENTORS

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## OTHER INFORMATION

## CATEGORIZED AS

- **Imaging**
  - Medical
- **Medical**
  - Diagnostics
  - Imaging
  - Other
  - Research Tools
- **Research Tools**
  - Other

## RELATED CASES

2020-303-0

### ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Percutaneous Heart Valve Delivery System Enabling Implanted Prosthetic Valve Fracture
- A distensible wire mesh for a cardiac sleeve
- Method to Improve the Accuracy of an Independently Acquired Flow Velocity Field Within a Chamber, Such as a Heart Chamber
- Percutaneous Heart Valve Delivery System
- Growth-Accomodating Transcatheter Pulmonary Valve System
- System for Transcatheter Grabbing and Securing the Native Mitral Valve's Leaflet to a Prosthesis
- Multiple-Input Multiple-Output (MIMO) Systems for Multi-Packet Reception (MPR)
- Real-time 3D Image Processing Platform for Visualizing Blood Flow Dynamics
- Method for Synchronizing a Pulsatile Cardiac Assist Device with the Heart
- Automated Histological Image Processing tool for Identifying and Quantifying Tissue Calcification
- Cost-Efficient Repair For Cloud Storage Systems Using Progressive Engagement
- Simple, User-friendly Irrigator Device for Cleaning the Upper Aerodigestive Tract and Neighboring Areas
- Automated 3D Reconstruction of the Cardiac Chambers From MRI of Ultrasound
- Minimally Invasive Percutaneous Delivery System for a Whole-Heart Assist Device

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