



## Machine Learning Based Diagnostics of Heart Failure



### The Problem

Current practice requires manual extraction of heart failure parameters.



### The Solution

Our cutting-edge Machine Learning (ML) algorithms can automatically extract different parameters from a patient's echocardiograms.



### The Commercial Benefit

Our novel algorithm is not ultrasound-vendor tailored and thus is capable of running on any system that provides DICOM images, on-line or off-line. The invention's models achieve >94% accuracy for the VTI (volume of blood flow) parameter and <5% median error for mitral valve peak velocities.



### Market Potential

Industry experts project Echocardiography (ECG) Devices market to grow steadily at a CAGR of above 6% by 2021. One of the primary drivers for this market is the rapid increase in the number of incidences of cardiac disorders.



### Target Markets/Industries

- Hospitals
- Diagnostic centers
- Cardiovascular Devices Industry
- Echocardiography (ECG) Devices market



### Intellectual Property

Patent Pending



### Team: Primary Inventor

#### Dr. Joseph Keshet

Dr. Joseph Keshet is a faculty member in the Department of Computer Science at Bar-Ilan University. Dr. Keshet's research interests concern both machine learning and computational study of human speech and language. Dr. Joseph Keshet, a foremost authority on voice analysis, has developed sophisticated systems and software to address voice questions and tap the vast potential in this exciting frontier field.



### Future Research

Use the above parameters for LVFP prediction.



### The Opportunity

Companies are invited to license our patent through a licensing agreement with or without sponsored research.



### Keywords

- Machine Learning algorithms
- Echocardiogram
- ECG
- Left Ventricle Filling Pressure
- LVFP
- Volume of blood flow
- VTI