

Cardiac Ultrasound: Objective Data Acquisition, Assessment & Optimisation

■ Dr Robert B. Labs

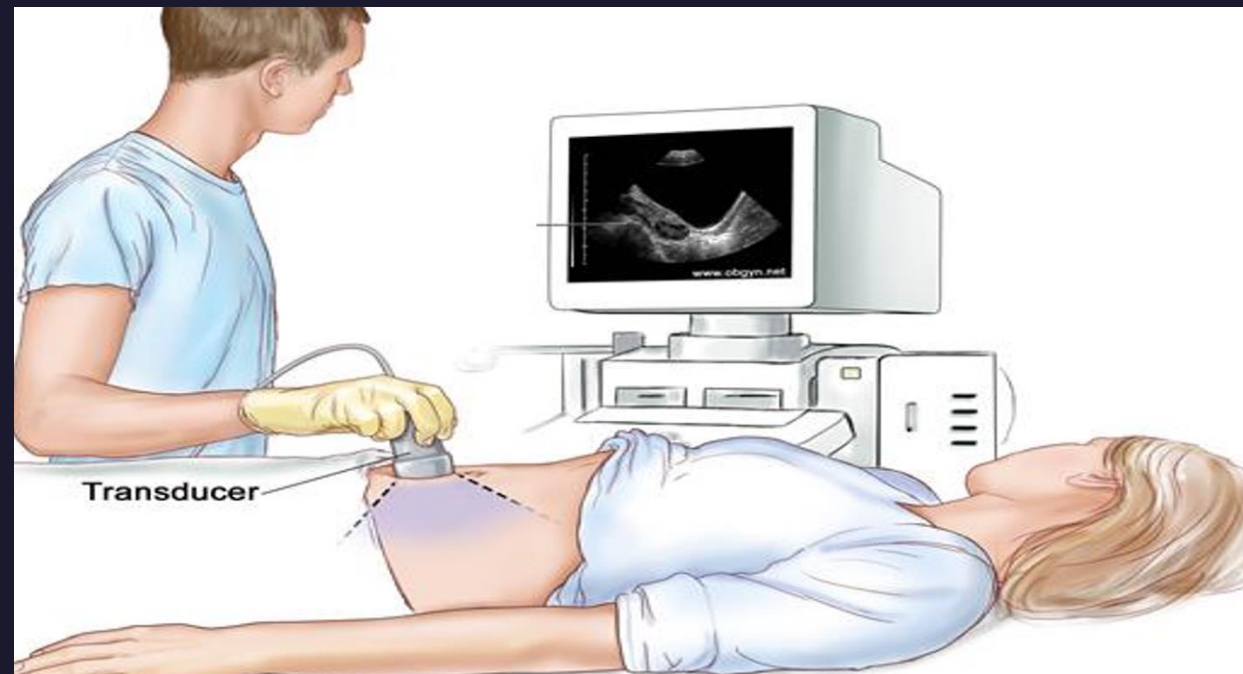


Cardiac Echocardiogram

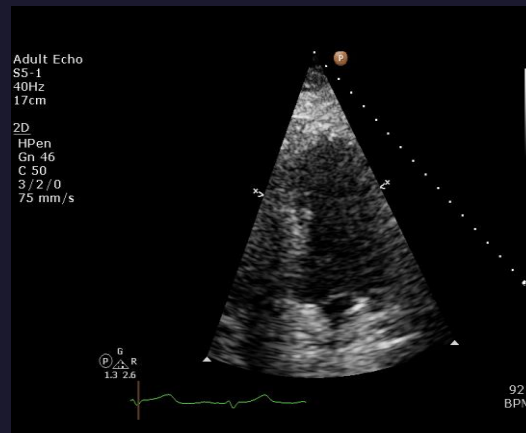
Obtaining high quality ultrasound image is not a trivial task for trainees, researchers and medical students likewise.

In the UK, an additional years of training is required to gain competency in the acquisition of anatomical details and interpret complex cardiac mysteries.

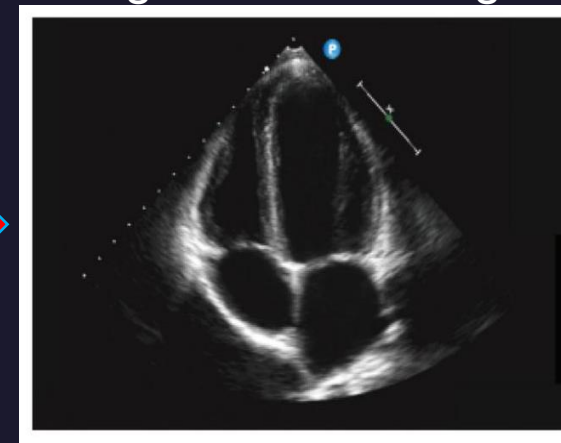
This solution allows a novice to capture high quality cardiac data like a pro.



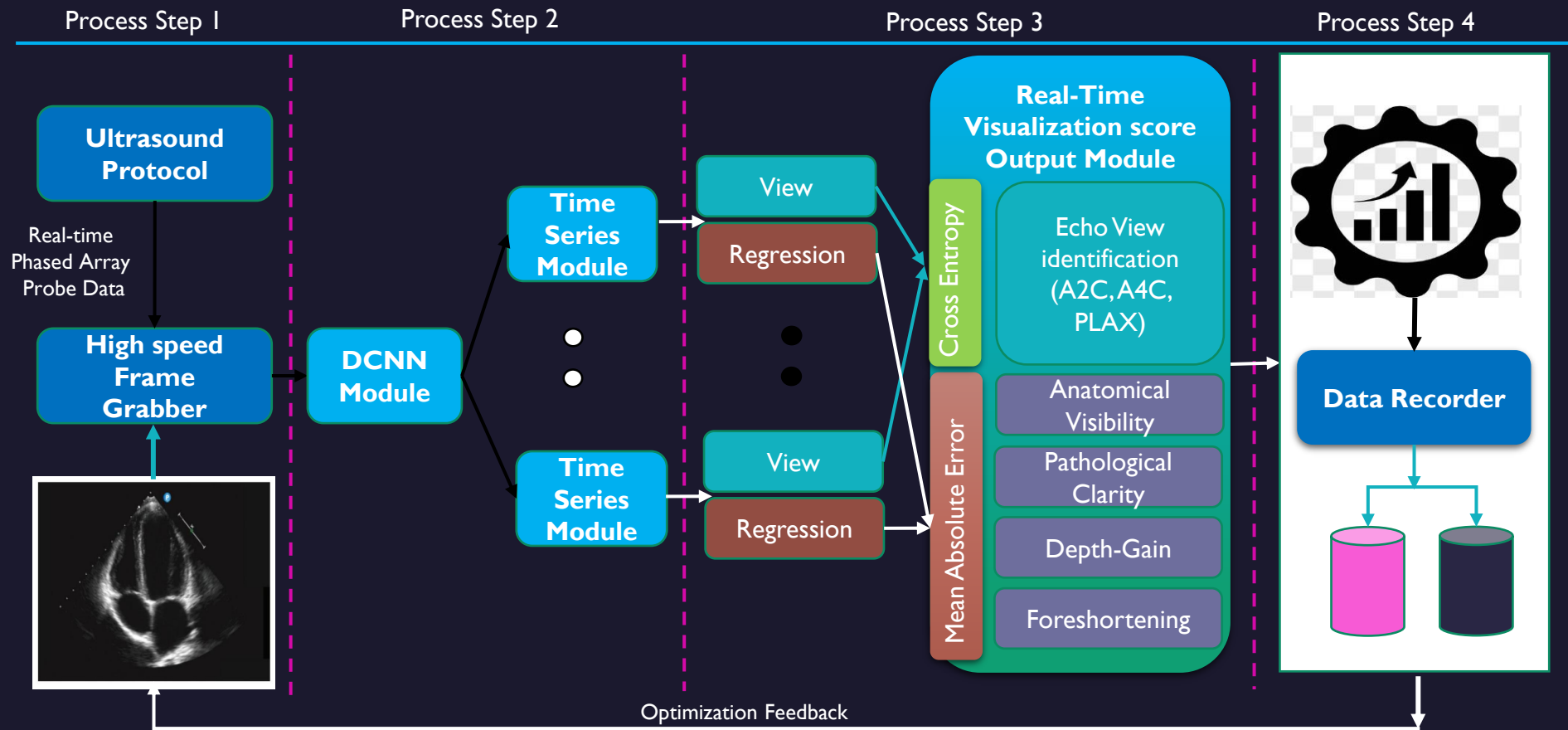
Low Resolution Image



High Resolution Image

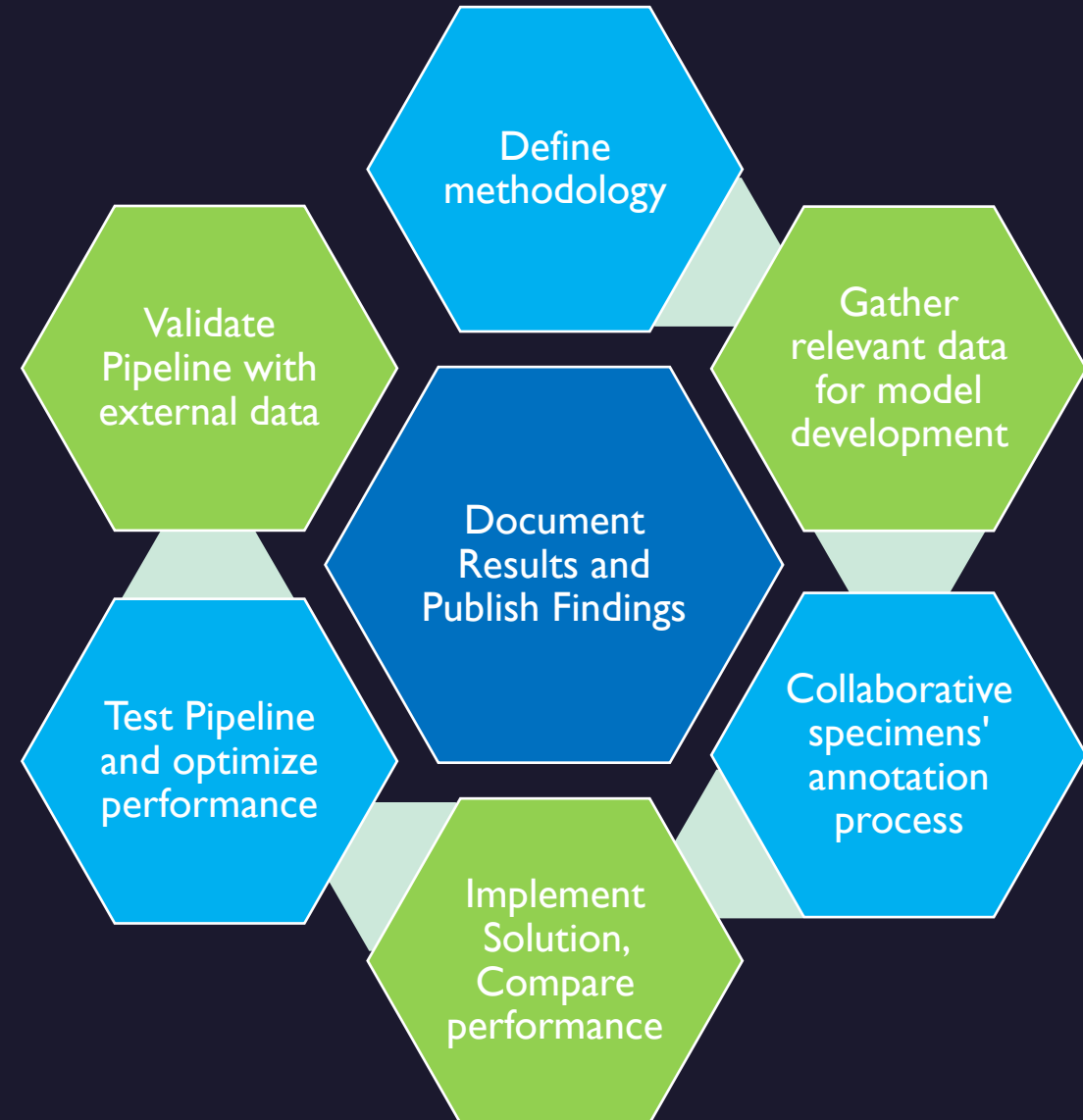


The Objective Cardiac Acquisition, Assessment & Optimization



Achieved Research Objectives

- Objective quantification of anatomical structure of echocardiograms in real-time and automatically identify the view types, within the selection of 14 apical views
- Operator guidance to obtain high quality image and identify various pathological element within a given echocardiographic image
- Onscreen probe handling and transition guidance with objective indicators for best image acquisition and playbacks.



Research Outcomes

Model was validated using real-time, ultrasound images with varying frame lengths and adjustable spatial resolution of 128x128 and above.

	Visibility	Clarity	DepthGain	FShorten
Mean	0.052	0.062	0.069	0.056
±SD	0.011	0.017	0.011	0.010

End-to End Delay = 127.90ms

Research Impacts

- Accelerate learning curve for novice users
- Accurate guidance in antenatal investigations
- Medical Emergencies (point of care scenarios)
- Reliable diagnosis of Cardiac infarction
- Cardiac prognosis and risk factor treatment
- Obstetrician & Gynaecological investigation

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