

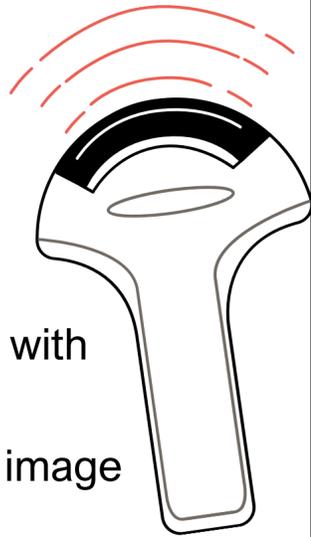
# PERSONALISED PROBE GUIDANCE VIA REINFORCEMENT

## LEARNING IN LOW-RESOURCE SETTINGS

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RADGUIDE

### The Challenge



- Low-resource environments struggle with operator skill gaps
- Poor probe positioning leads to poor image quality & missed diagnoses
- Training opportunities limited; supervision scarce

### Why Reinforcement Learning

- AI that *learns from interaction*, adapts to the user's probe movements
- Provides *real-time, personalised feedback* to improve technique
- Unlike static tutorials, adapts to individual skill level & context
- Lightweight AI agent integrated into portable US devices or tablet app

### System Design overview



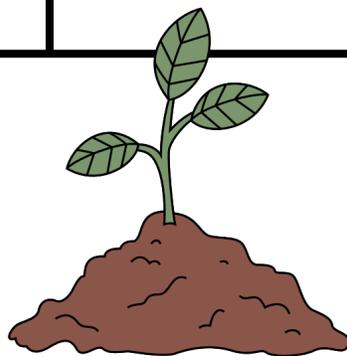
- Uses ultrasound image features + probe orientation sensors
- Suggests micro-adjustments to optimize imaging planes
- Tested in [specify low-resource setting or simulation]

### Pilot Study & Results

- Improved novice users' ability to acquire diagnostic images by 20%
- Reduced scan time & need for expert intervention
- Enables remote, scalable ultrasound skill development
- Supports task-shifting in healthcare teams (e.g. midwives, community health workers)

### Clinical & Training Impact

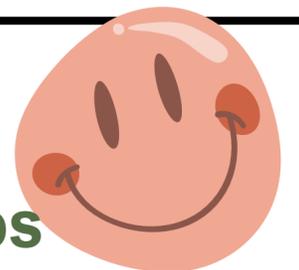
- Potential to democratize ultrasound access & improve patient outcomes
- Passionate Radiographers & Non Sonographers committed to expanding ultrasound skills.



### Promotes a Growth Mindset

With positive thinking via the probe guidance, failures become learning opportunities. This mindset fosters resilience, motivation, and continuous self-improvement.

### Next Steps & Vision



- Expand to obstetric, abdominal, MSK scanning protocols
- Collaborate with NHS ultrasound training schemes
- Develop AI-human hybrid training modules for rapid skill acquisition