Introduction

• Created an Android application capable of recording endoscopic images
• Gave doctors the ability to modify images
• Designed and manufactured a mechanical adapter
• There is a need for a portable, low cost solution for capturing endoscopic images

Problem

• Current imaging towers are large and bulky
• They cost thousands of dollars (~$6000)
• Difficult for hospitals in third world nations to buy
• Not enough to keep one in the ER at all times
• Size makes it difficult to transport

Solution

• Android tablets are low cost and have the capability to record videos and images
• Create a hardware adapter that interfaces between an endoscope and the Android tablet
• Create an application that allows the user to manipulate lower level camera settings
• Application needs to allow user to associate notes with images and draw on images

Outcomes and Results

• User has the ability to store high quality images during procedure.
• User has the ability to draw on images to indicate unique pathology
• User can control camera settings in order to achieve desired image quality
• App detects the circular image and expands it to fit the screen
• Hardware adapter costs $60 while Asus tablet costs $235
  • 95% reduction in costs (excludes scope)
• Adapter only slightly bigger than tablet, significantly increasing portability

Future Work

• Connect application to a secure server in order to upload and view images
• Provide frame by frame video playback and option to save frames
• Portable light source

Credits

• Core NSF CISST/ERC; Other Government:; Industrial Partner:
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