Where we’ve been.. And where we’re going

George Thoma
NASA’s ATS-6 Satellite
Communications Technology Satellite (CTS)

Footprint: Fort Yukon to Bethesda

Ku Band (12-14GHz)
Small antenna for earth station

A joint US-Canadian satellite program
10-foot antenna, rural Alaska
Telemedicine via satellite

2-way broadcast quality video

Audio, data
Broadcast studio at NLM/Lister Hill Center
Distance learning, conferences – NIH to sites in West and Alaska
Motivations

Does the project

• Help diagnose/screen for diseases (especially in resource limited areas)?
• Create efficiencies in NLM’s core mission?
• Bring NLM’s historic treasures to a wider audience?
• Help people in any way, e.g., in the midst of a mass disaster?
Motivations

• Help diagnose/screen for diseases (especially in resource limited areas)?
  • Automate the detection and localization of TB or cardiomegaly in CXR
  • Automate the detection of malaria from RBC in blood smear images
  • Automate the detection of cervical cancer in colposcopic and histology images
Spine Images

Earliest foray into medical images ~1992
CDC/NCHS Tractor trailers parked near Chester, PA
Inside the trailers
Motivations

• Create efficiencies in NLM’s core mission?

Homemade Bookscanner: preservation, ILL

Automated Interlibrary Loan

Scanned images displayed prior to transmission
Motivations

• Create efficiencies in NLM’s core mission?

MARS System ~1995

Automated extraction of bibliographic data in medical articles to build MEDLINE citations

Machine learning, image processing
Automated portrait/landscape mode detection on a binary image
Motivations

• Bring NLM’s historic treasures to a wider audience?
Motivations

- Help people in any way, e.g., in the midst of a mass disaster?

**NLM People Locator**

>50 earthquakes, floods, tsunamis

First used in Haiti 2010
TriagePic used for family reunification

Arrival of “victims” at Suburban Hospital

Hospital staff use Lister Hill Center’s TriagePic to capture photo and metadata
To be passed on to the next longest serving staff member – Dr. Craig Locatis
Live long and prosper!

And boldly go where no man has gone before..
Live long and prosper!

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