Abras: A Software Tool to Support Observer Studies and Clinical Trials

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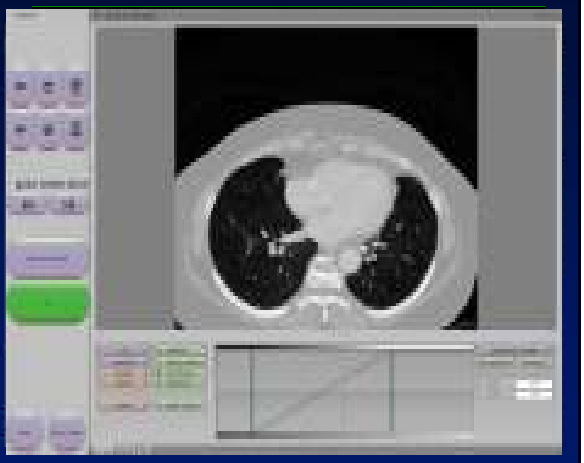
S. Armato receives royalties and licensing fees related to CAD technology through the University of Chicago. Software described is not intended for commercial use.

What is Abras

- Visualization
- Measurement
- Data Mining
- Scripting



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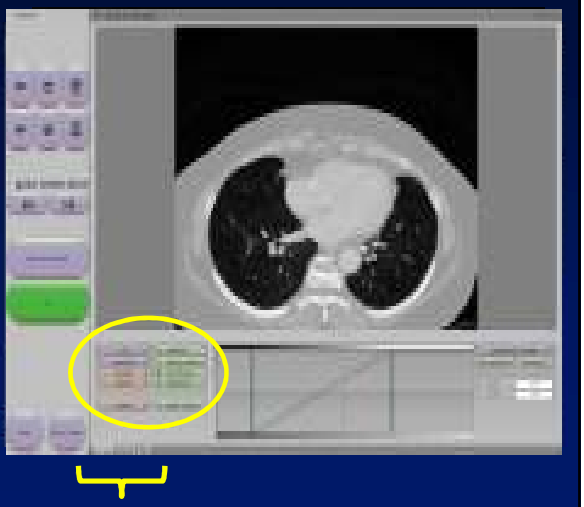

Research Limitations

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- Radiologist must use dedicated research computer

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- No universal reporting mechanism across institutions

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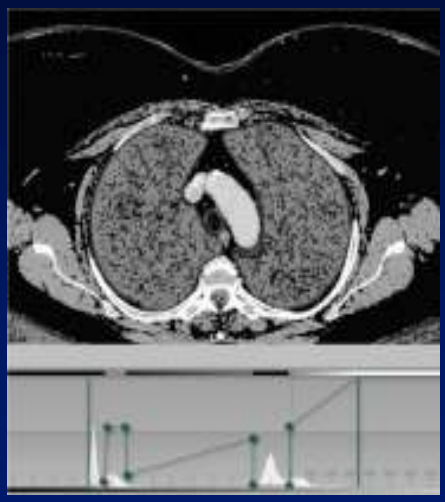
- Intuitive

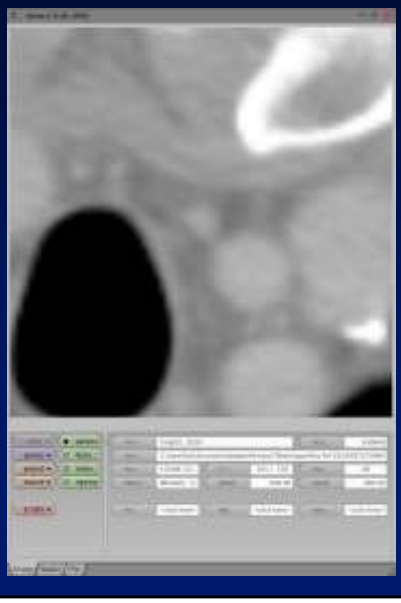
Abras

- Standard functions
  - Window/Level

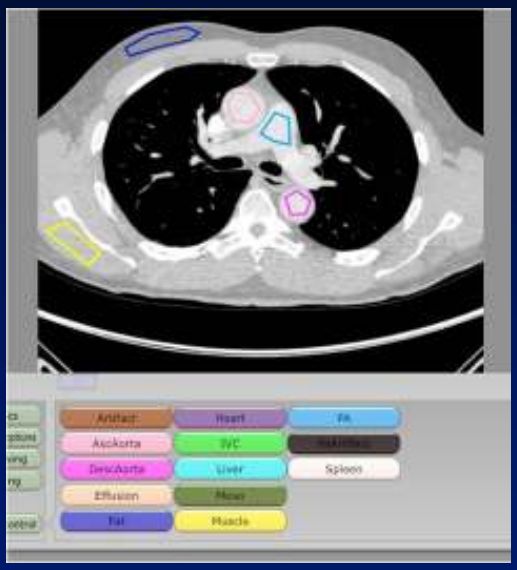


Abras

- Standard functions
  - Window/Level
  - Zoom



Abras: Use Case



Abras: Use Case

- Multi-institutional LIDC/IDRI Database
- 298 chest radiographs were added to the LIDC Database of CT scans
- Find DRR nodule in CXR and indicate confidence

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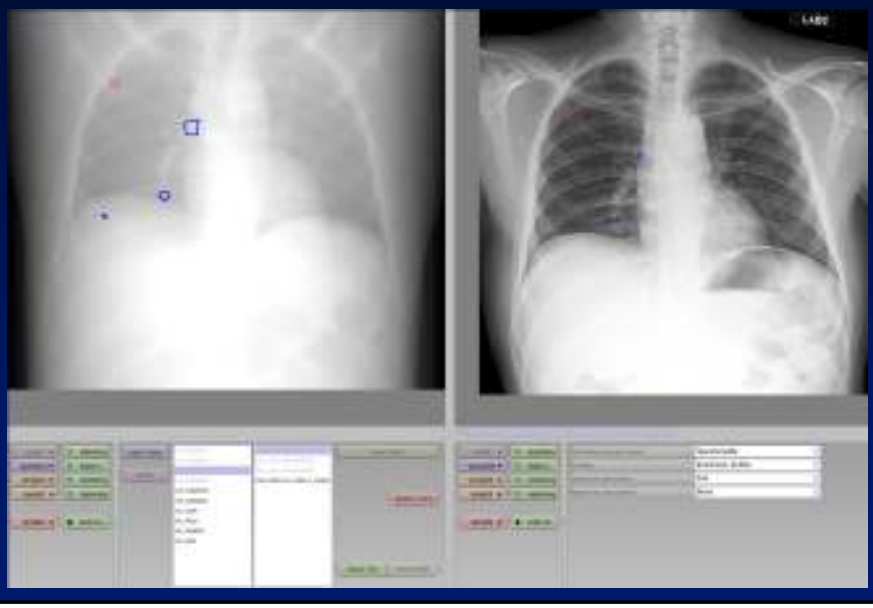

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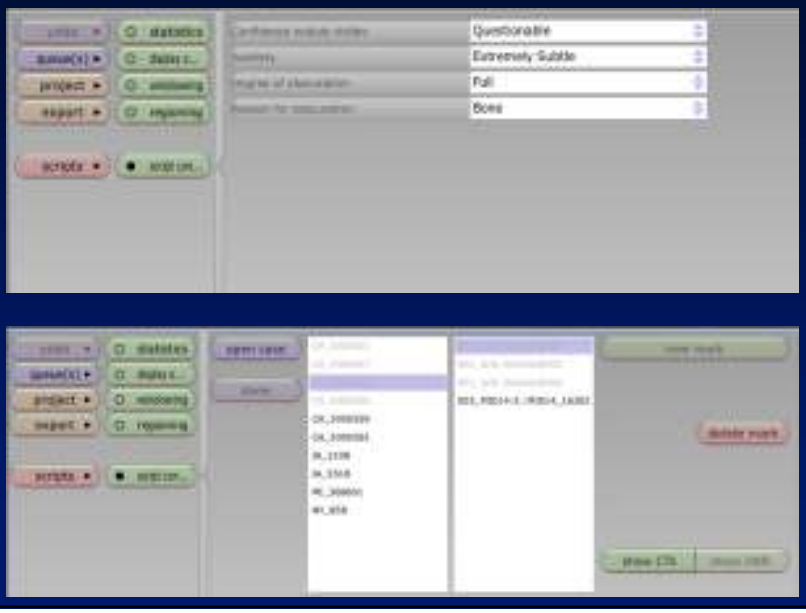

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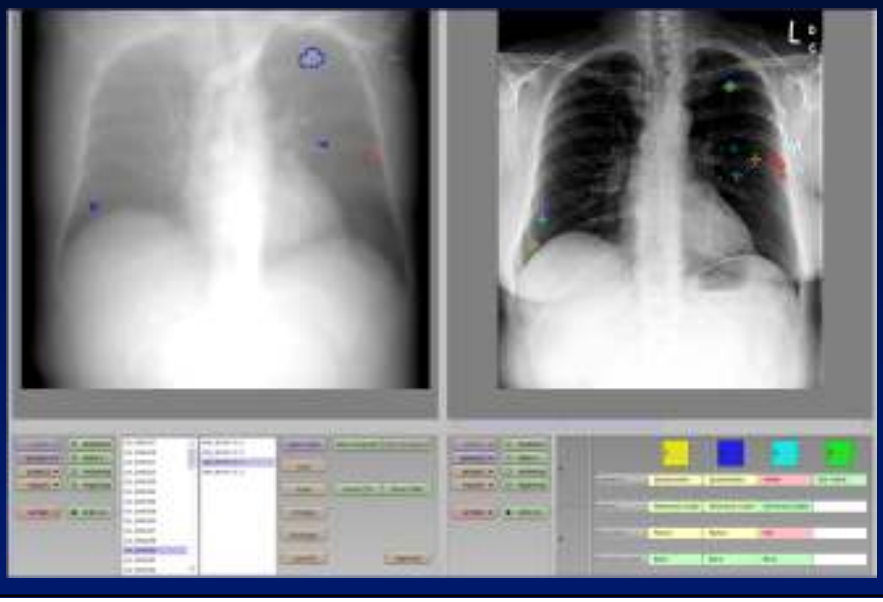

Abras: Use Case

- Original tool not suitable
  - 3 cases/hour
- Abras interface produced in 2 days
  - 20 cases/hour

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- Requires script writers

Future Directions

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- Configurable views for simultaneous display and analysis of multiple images
- 3D image visualization and interaction
- Input and output formats for medical image analysis toolkits
- Touch-screen and mobile device support
- Extend meta-tag support

Summary

- Intuitive, portable, and extensible
  - customizable
- Image analysis and CAD development
- Observer studies
- Clinical trials support
  - consistency in measurement acquisition and reporting

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