

PARENT CATEGORY:

Informatics

SUB CATEGORY:

Displays and User Devices

TITLE

Retina Displays: Image interpolation methods for resizing medical images for tablets

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PURPOSE/AIM

- 1) To review image interpolation techniques for resizing radiological images to fit high resolution tablet displays.
- 2) To raise awareness of the built-in interpolation options for tablets APIs for common tablets, such as iPad and Android.

CONTENT ORGANISATION

Tablet devices are starting to have resolutions that surpass medical image resolutions; e.g. the new iPad3 retina display is 2048x1536 pixels while most CT and MRI images are typically 512x512 pixels or less. This means that the images may be rescaled (or upsampled) to fit the display. When upsampling an image there are several interpolation options, e.g. 1) nearest neighbor, 2) bilinear, and 3) bicubic. We will overview pros and cons of each of these methods in terms of quality and computational requirements. Currently developers APIs for iOS (iPad and iPhone) and Android tablets typically provide only nearest neighbor or bilinear interpolation (the default). This suggests that developers may consider writing their own bicubic resampling algorithm to optimally display medical images.

SUMMARY

The major teaching points of this exhibit are:

- 1) To be familiar with image upsampling options.
- 2) To be aware that tablet developers APIs may not default to the optimal upsampling method for displaying medical images.