High-throughput JPEG 2000 Imaging-Fabric integration Internship

Coding challenge

1. Download a representative set of uncompressed DICOM images from a free DICOM library (typically 512x512 12bits/16bits monochromatic or 8bits RGB images).

   For each image, extract the PixelData buffer and compress it to the formats JPEG, JPG 2000 (jp2) and High Throughput JPEG 2000 (jph). Note the compression time, compressed size and quality metrics depending on the quality factor used.

   Compute the statistics by category and quality factor and plot the results.

   What are your observations?

2. Create a web application capable of displaying these images (for 12 and 16bit images, you can apply a linear transform and display 8bit data).

3. Propose a method to obtain the low-resolution part of a .jph file from a server supporting this feature. How can you decode the partial data to full size image?

Use preferably NodeJS for scripting and back-end service, free or demo software for jp2/jph conversion and openJPH in the browser to convert from/to jph formats.

You will submit your work as a git repository with clear instructions about the installation setup, a documented code, your input data (images), answers and results.