Medical Image Processing with ChRIS and OpenShift

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Combined Goal

Improve the scale and efficiency of healthcare image processing applications using Red Hat technologies and the power of the MOC

Democratize medical image application development

- Standardize healthcare application development (OCI/containers/OpenShift)
ChRIS

ChRIS (ChRIS Research Integration System) is an open source (https://github.com/FNNDSC/) web-based medical image (e.g. MRI) processing platform

- Expose scalable compute power and novel hardware
- A framework to transform algorithms/tools created by scientists into enterprise ready resources built on industry standards
OpenShift / Kubernetes

- OCI/containers standardizes image processor development
- Job Framework
- Resource Management
- Easy to operationalize
Use Cases
Medical Processing

- Registration
  - Morph one image into another to understand how they relate

Original Brain + MNI152 Template = Registered Brain
Medical Processing

- Classification (AI/ML)
  - Identification and pointing out abnormalities
Medical Processing

- Tractography
  - Ex: Mapping fiber paths through the brain for surgical planning
What’s Happening?
Image Viewers
ChRIS Store

Expand the reach of your image processing software

ChRIS is an open source platform for medical analytics in the cloud, democratizing the development of image processing apps within an ecosystem following common standards, rather than disparate silos.

A ChRIS Developer account enables you to submit your image processing application as a containerized ChRIS plugin and share it with the broader ChRIS community of researchers and clinicians. Join us!

ChRIS is developed by Boston Children’s Hospital in partnership with Red Hat, the Massachusetts Open Cloud (MOC), and Boston University.

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Thank You!
redhat.com/chris
github.com/FNNDSC