

CSSI Element : Large-Scale Image Processing Infrastructure Development (LIMPID)



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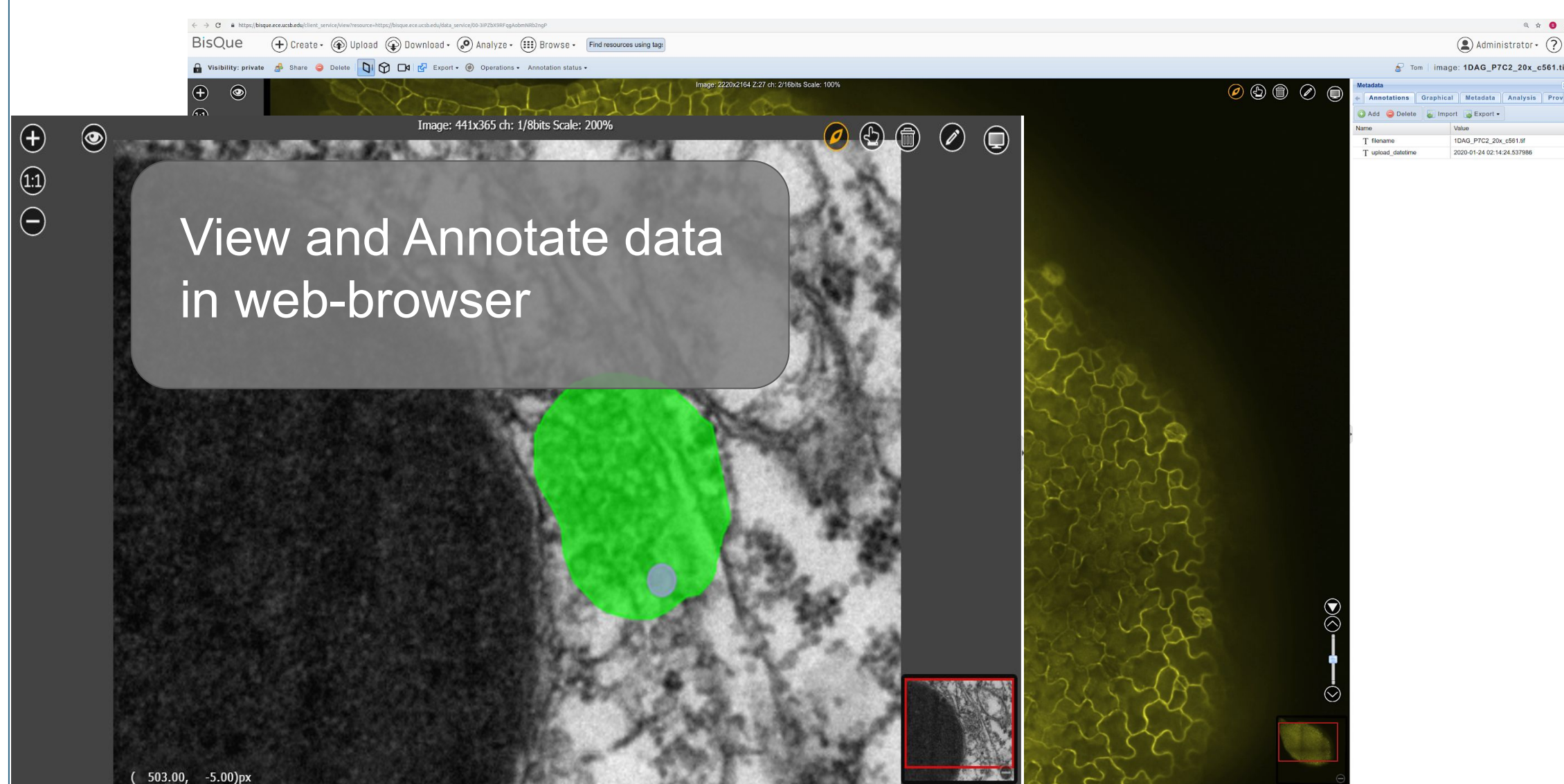
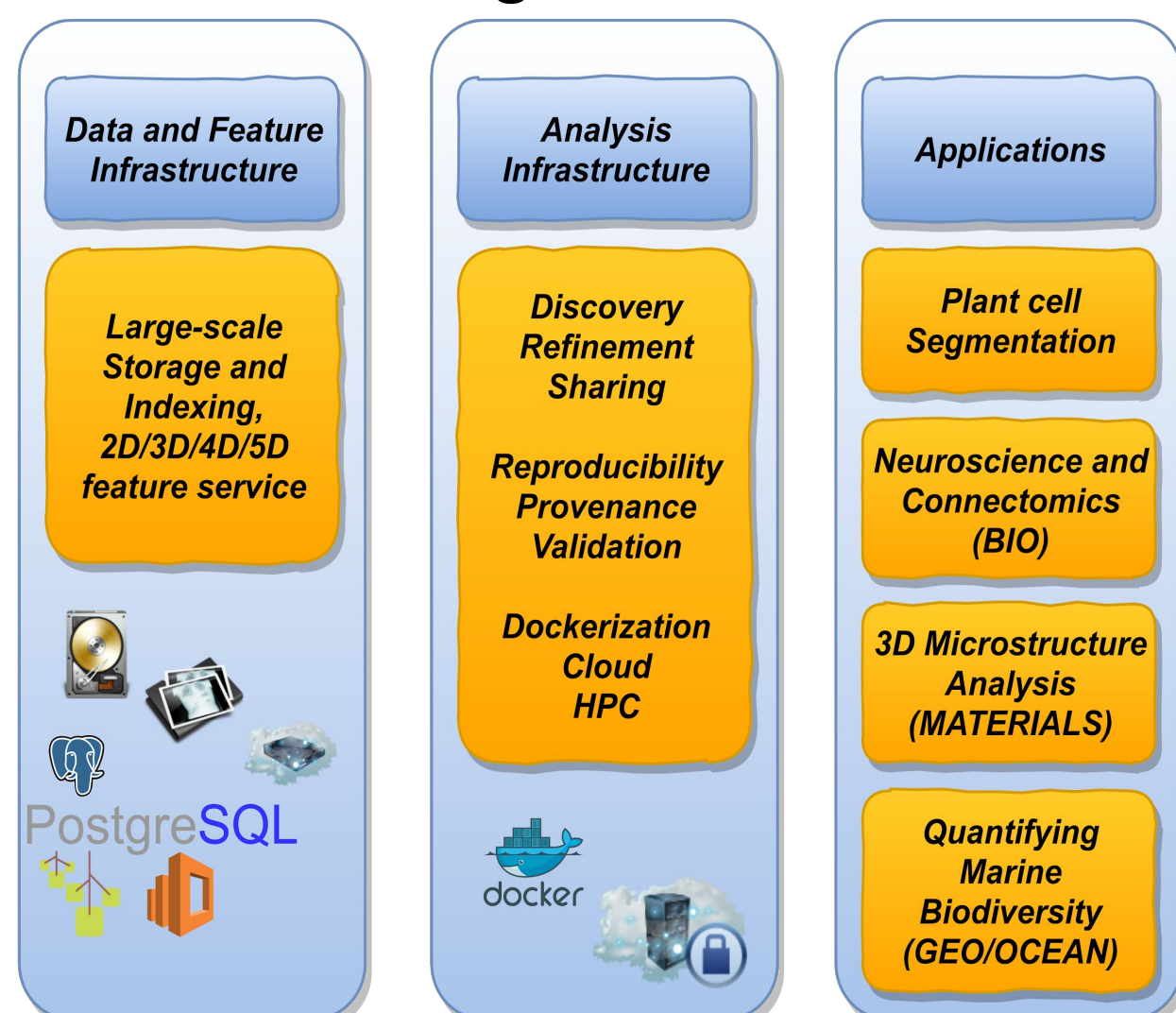
BisQue Team : Satish Kumar¹, Amil Khan¹, Griffin Danninger¹



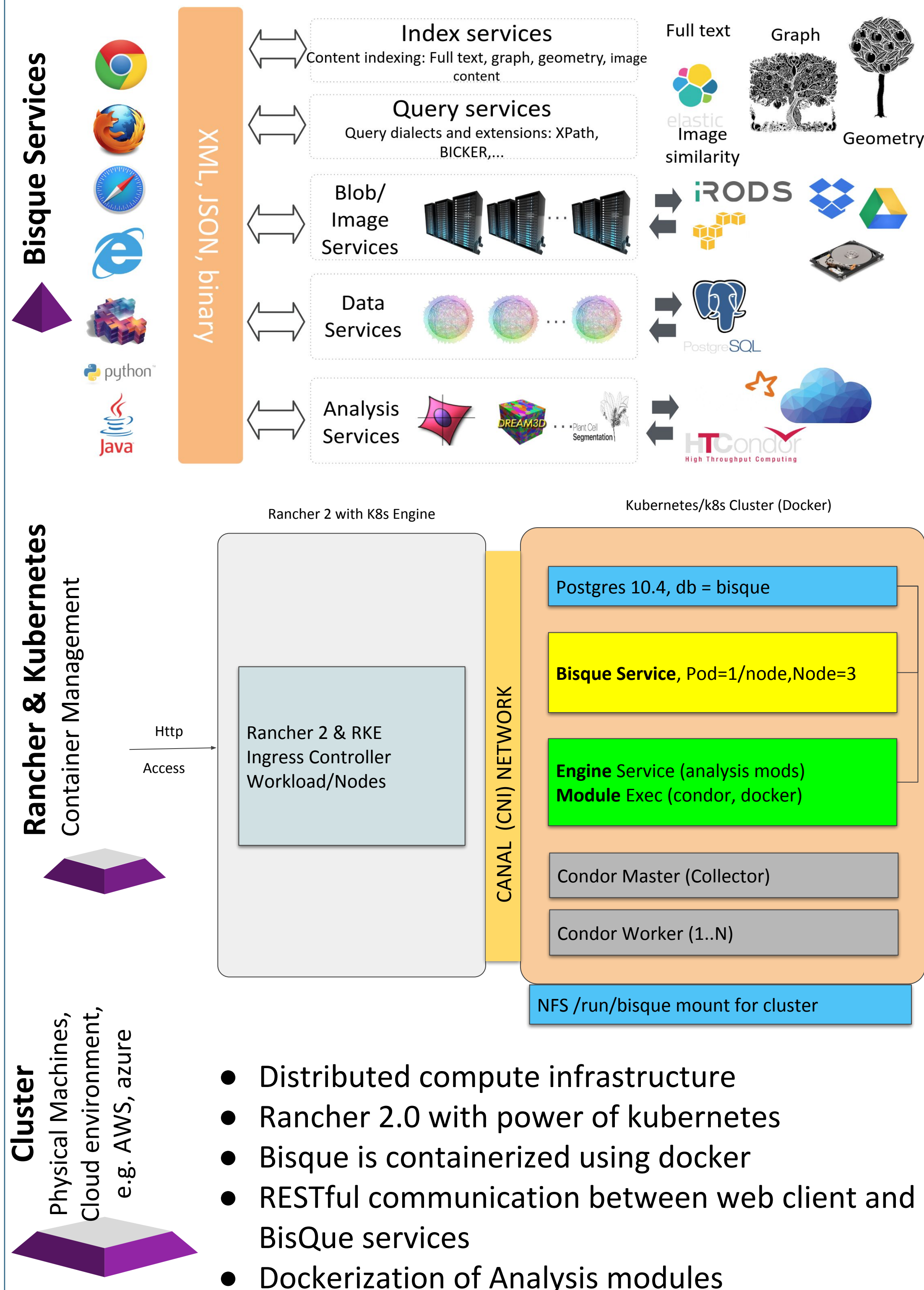
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BisQue Overview

- LIMPID is built on the cloud-based analysis platform BisQue developed in the Centre for Multimodal Big Data and Health at UCSB
- Management, analysis and sharing of images and metadata for large-scale problems
- Flexible and scalable query system across the network for multimodal data items
- Simple and scalable module integration system for analysis tasks over images and metadata
- Web based provenance viewer to explore past analysis run for improved repeatability
- Supports 250+ life science image and video formats
- Github page : <https://github.com/UCSB-VRL/bisque>

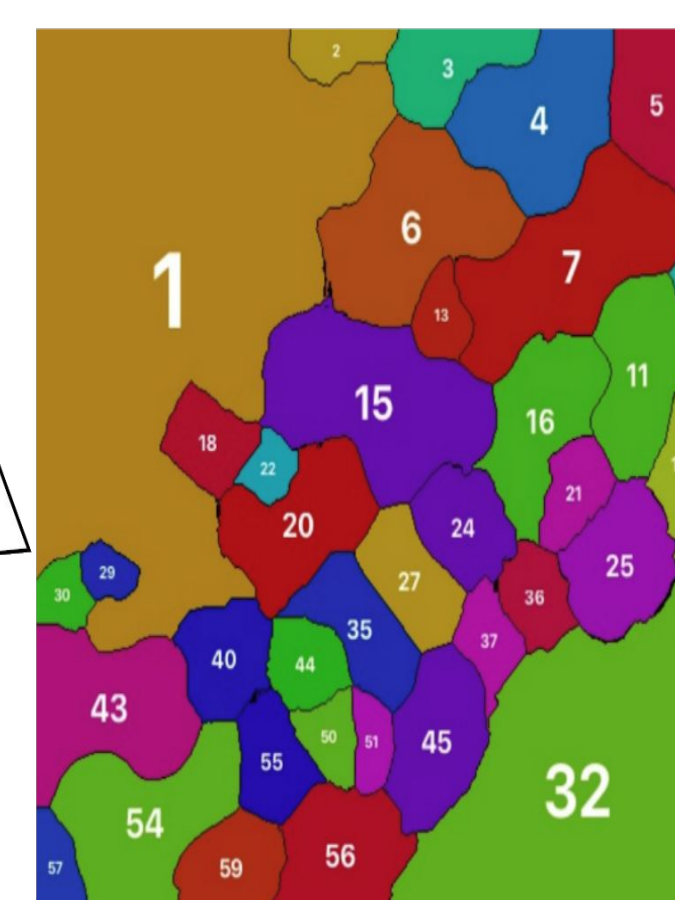
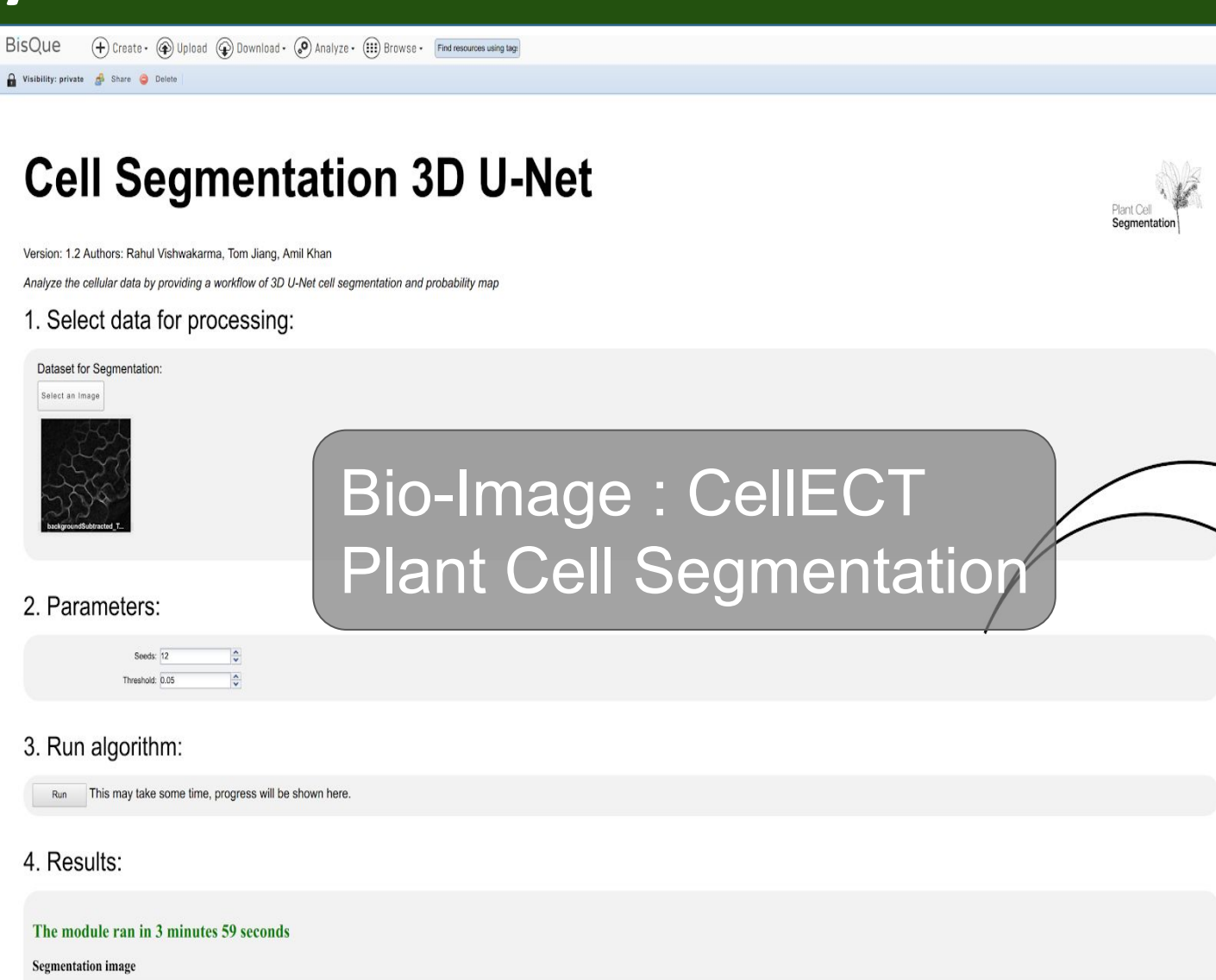
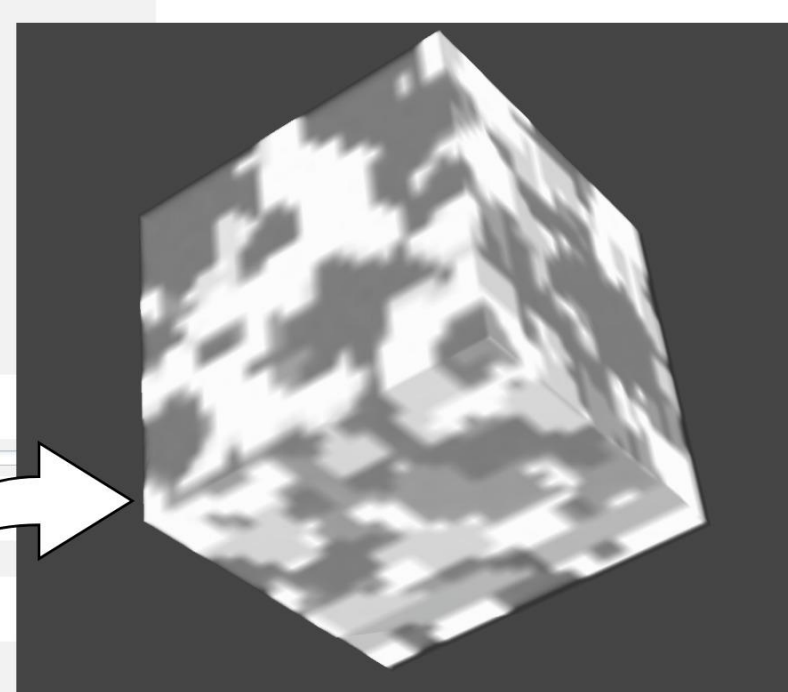
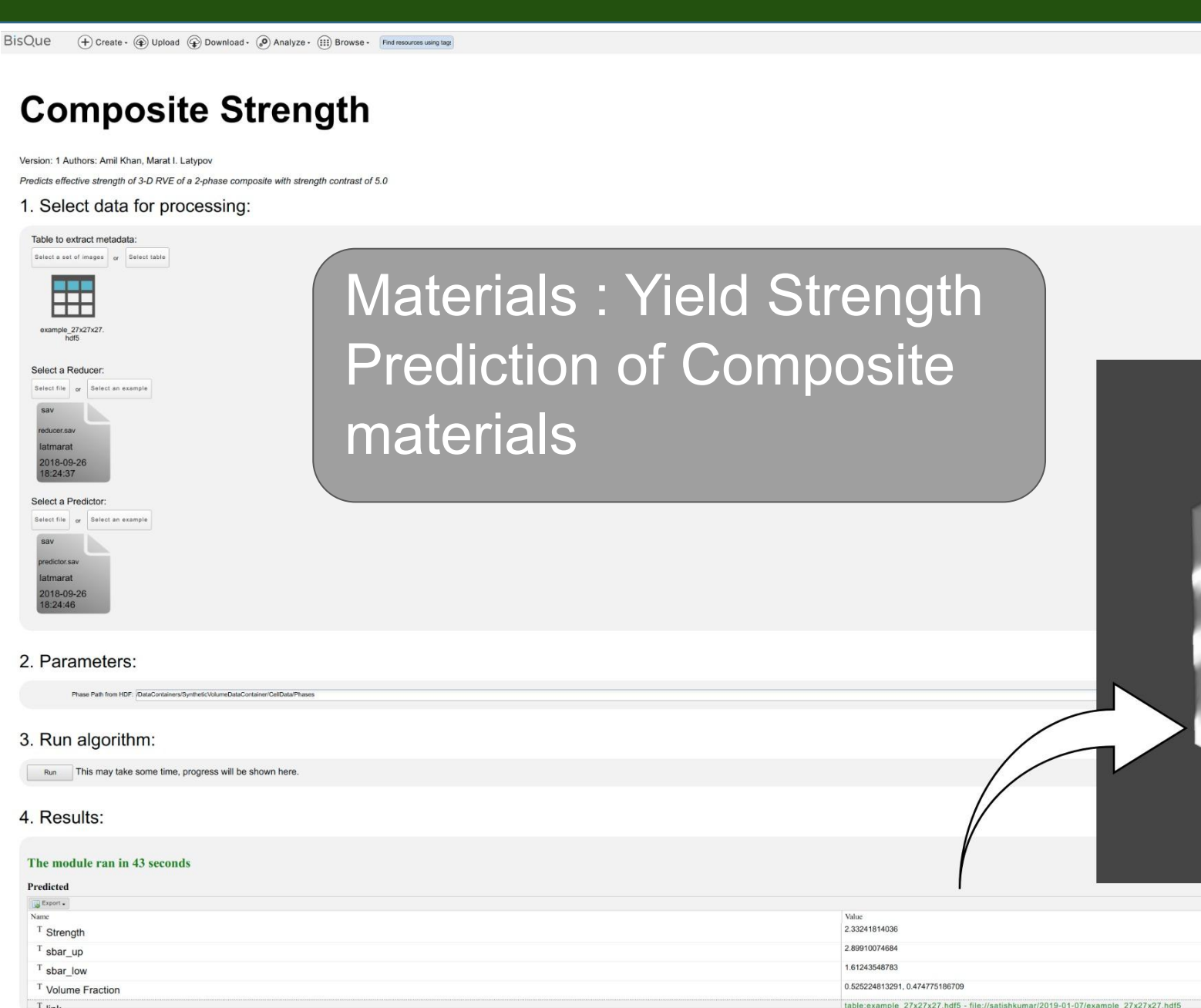


Architecture

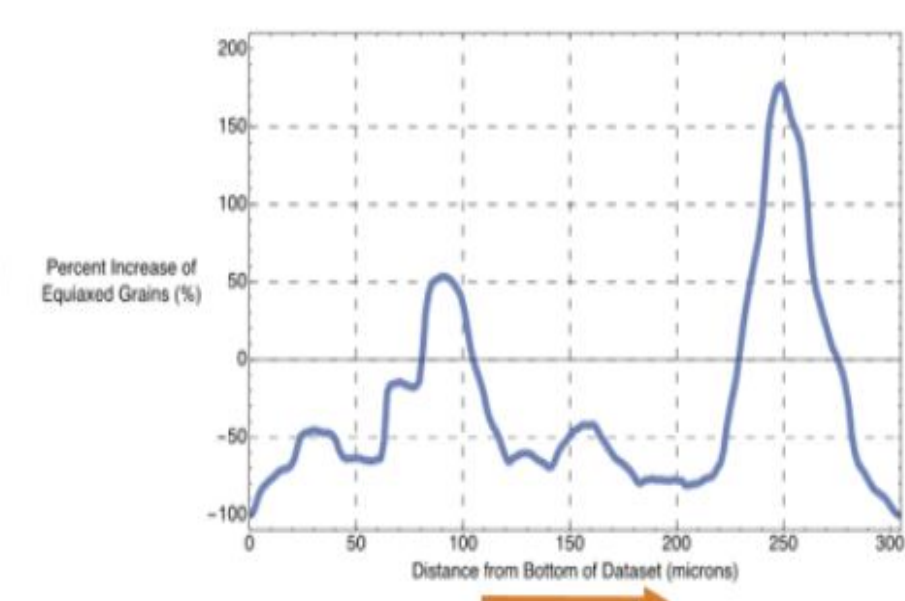
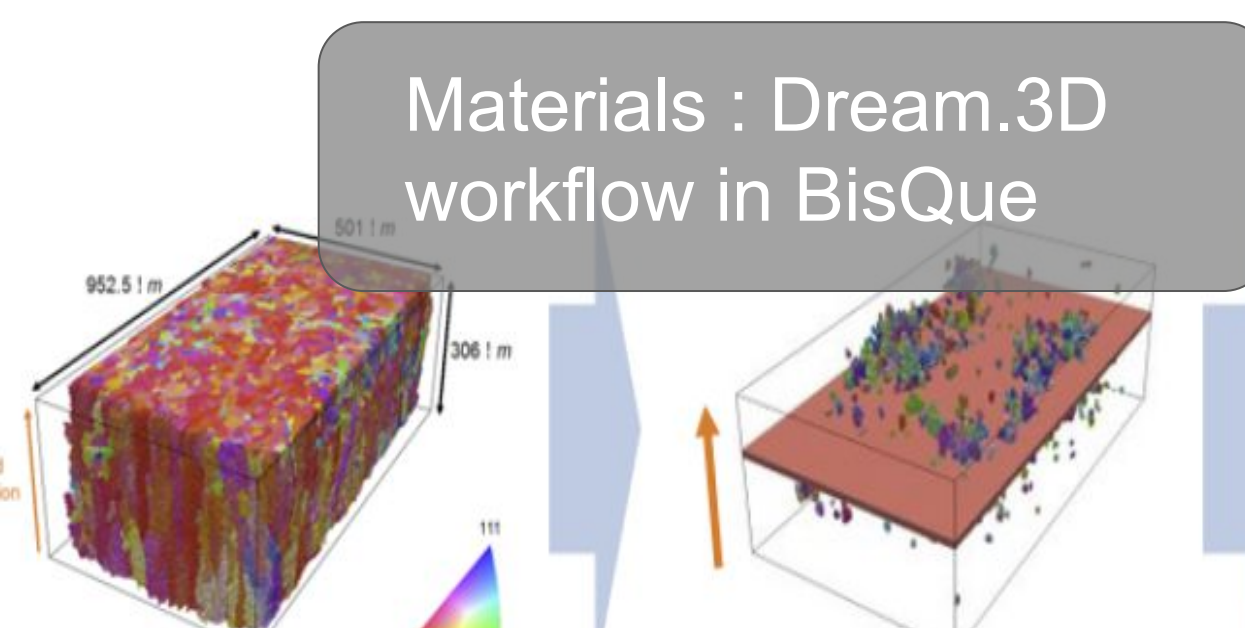
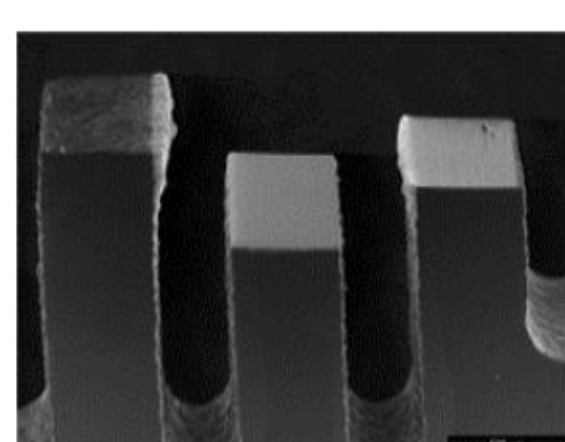


- Distributed compute infrastructure
- Rancher 2.0 with power of kubernetes
- Bisque is containerized using docker
- RESTful communication between web client and BisQue services
- Dockerization of Analysis modules

Deep Learning Analysis Infrastructure



Segmentation Output



Features :

- Powerful Image Viewer and Annotator
- All-in-all Import/Export data
- Easy Share of data as well as analysis
- Large datasets in the web browser
- Multi-modal search and mining in the datasets

References

- Dmitry Fedorov and B.S. Manjunath and Christian Lang and Kristiam Kvilekval, Scalable Image Informatics, Academic Press Library in Signal Processing, Volume 6, September 2017, <http://escholarship.org/uc/item/7nf7492x>