

Bisque : Bio-Image Semantic Query User Environment

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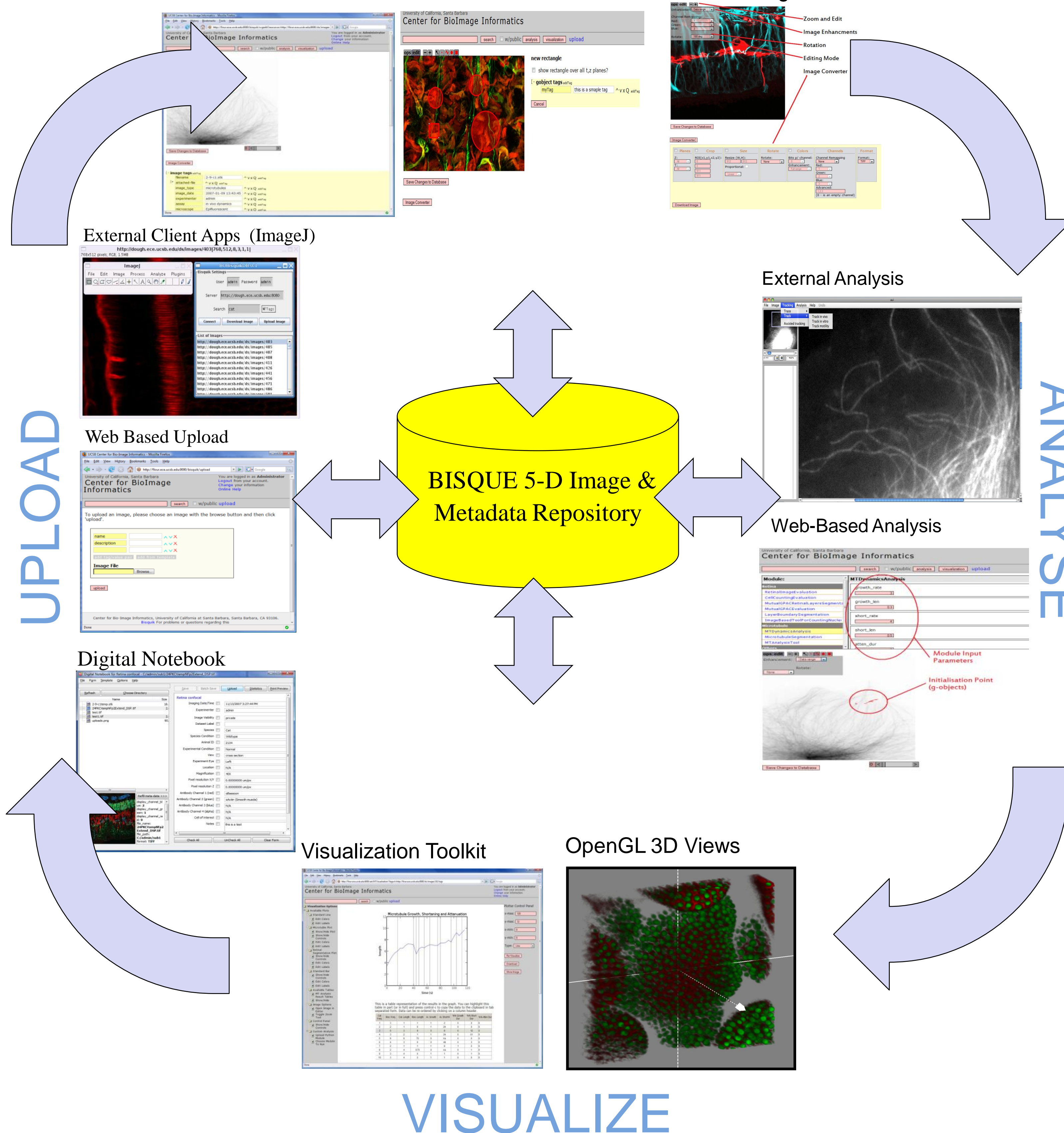
web: <http://www.bioimage.ucsb.edu>



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SEARCH, EDIT, ANNOTATE

Text Annotation (Tagging) Image Annotation (G-Objects) Rich Editing Features



What is Bisque?

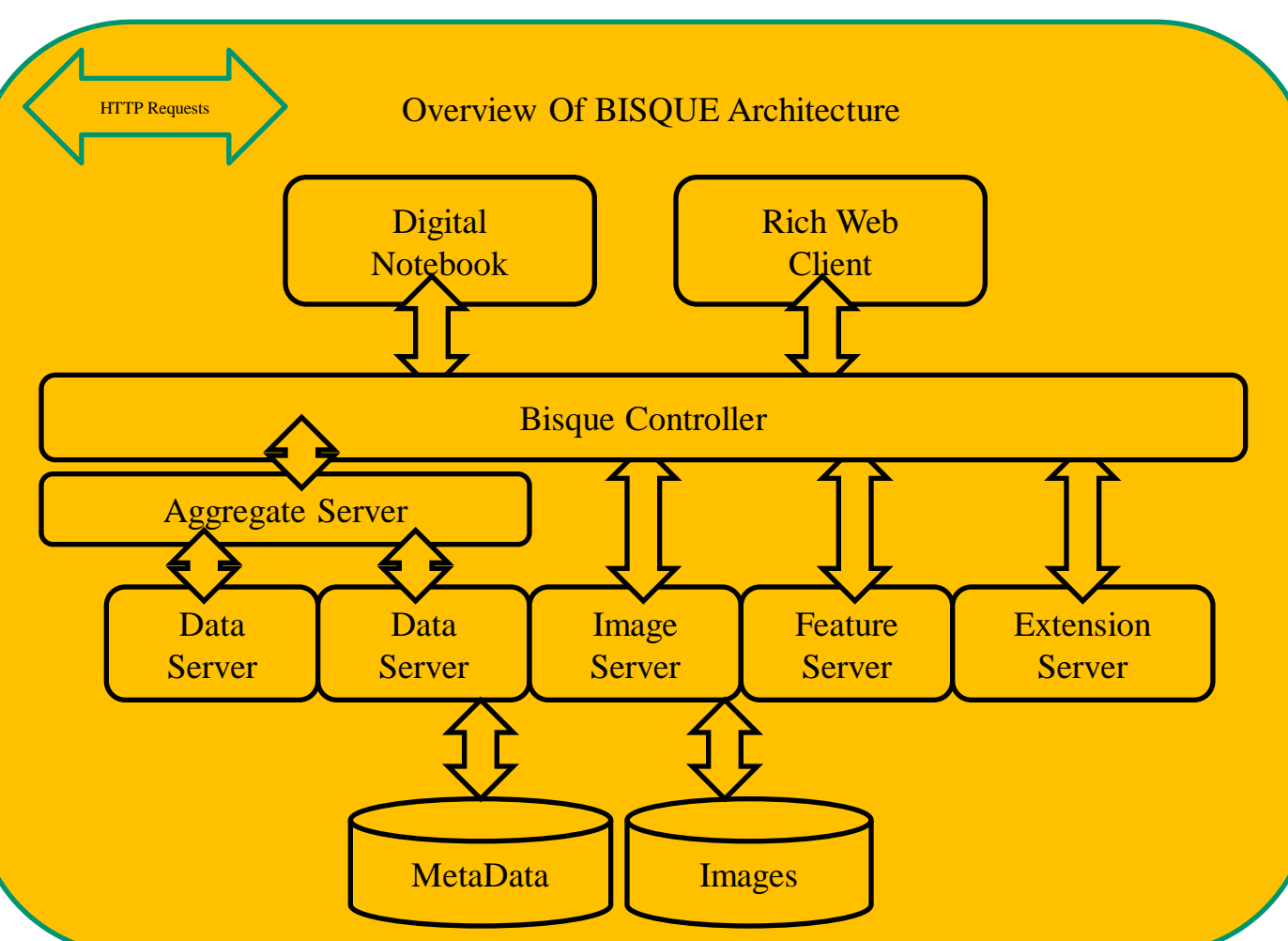
- Online repository for 5D biological images.
- Data driven extensible suite of analysis tools
- Currently 125,000 2D Images
- 5000 5D Images
- 84,000 Image Tags

Bisque Features

- Textual and graphical metadata/annotations
- Web-based image management
- Support for heterogeneous biological data
- Online image processing, statistical analysis and visualization.
- Intelligent Search and Browse functionality

Bisque Architecture

- Flexible Data Model
- Scalable web-services architecture.
- Rapid development / integration of analysis modules



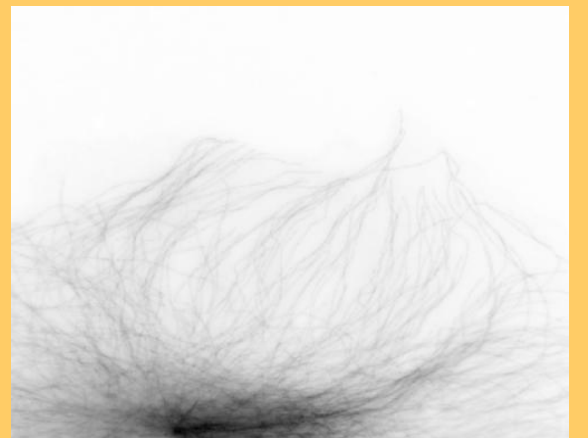
Future Directions for Bisque

- Content-Based Search
- Benchmarks
- Ontology support for merging of data models.
- Extended Visualization Environment
- Extended Image Processing Environment

Integrated Modules

MTDynamics Analysis

Performs life history analysis of microtubules

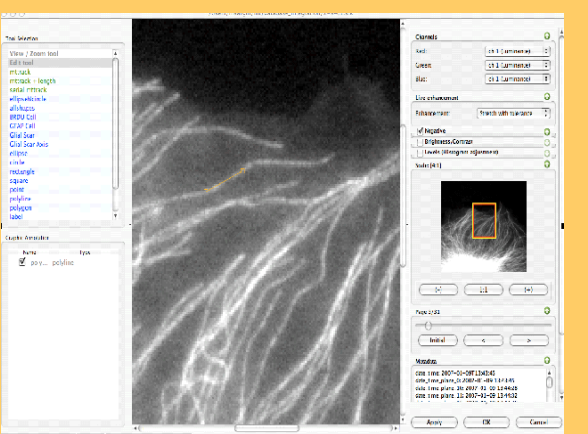


MTAnalysisTool

This module identifies "simple" microtubule events. These are events which occur between two consecutive input time-points.

Microtubule Tracking

The tracking algorithm uses the tracing algorithm to extract the body of the microtubule on the initial frame and adjusts the body for possible deformations, growth or shortening.

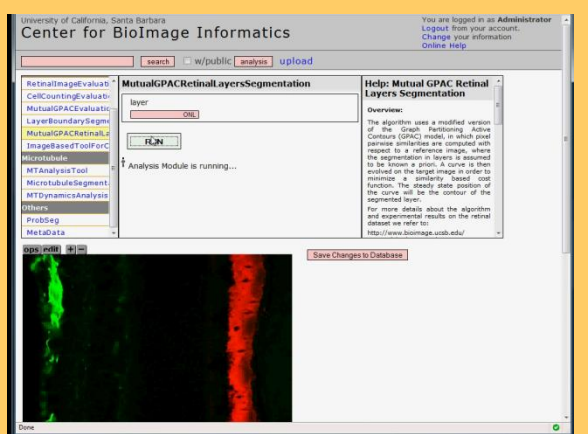


Microtubule Tracing

This algorithm traces microtubules by using a line segment (or a polyline) on the microtubule for initialization. Initialization is performed with the help of Digital Notebook.

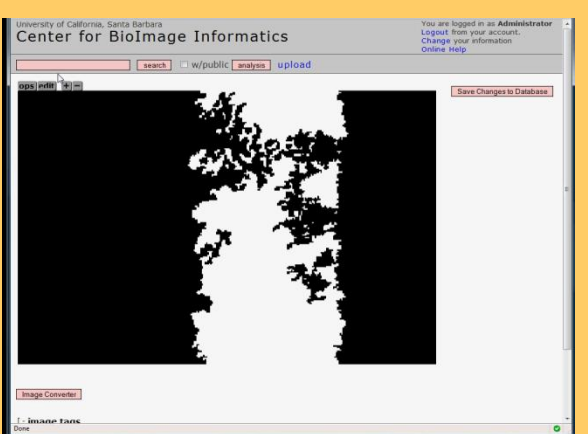
Mutual GPAC Retinal Layer Segmentation

The algorithm uses a modified version of the Graph Partitioning Active Contours (GPAC) model to segment retinal layers.



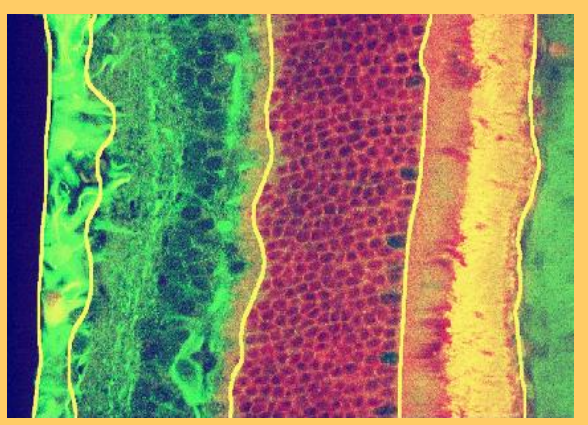
Mutual GPAC Evaluation

The Retinal Image Evaluation module provides performance measures on the Layer Boundary Segmentation analysis module.



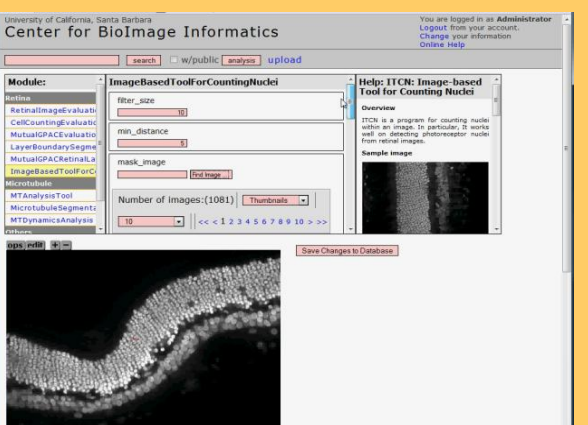
Layer Boundary Segmentation

The algorithm uses parametric active contours or snakes to locate the boundaries between layers in an image, e.g. retinal layer boundaries.



Tool for Counting Nuclei

A program for counting nuclei within an image. In particular, It works well on detecting photoreceptor nuclei from retinal images.



Cell Counting Evaluation

The cell counting evaluation module performs the evaluation of the cell counting module.

