

## **Zegami: A Platform for Image Centric Data Exploration**

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Enabled by automated platforms bioimaging and associated informatics is generating an unprecedented amount of data. Sophisticated imaging techniques yield large, heterogeneous, multidimensional data sets that need to be viewed, analysed, annotated, queried, and shared.

The resulting image data sets pose a number of challenges that are very distinct from conventional clinical imagery in their size and abundance.

Like computational tools enabled large scale gene sequencing, there is a need for advanced analytical tools for biological imagery in order to advance biomedical research. The key requirement is for automated tools that characterize the phenotype of images and extract higher level information content. Given the amount of data that is being generated we believe that there is a growing need for open tools that enable the efficient exploration of the image space.

We are developing a platform, Zegami, which facilitates an interactive image centric exploration of large collections of biological imaging data. Building upon the concept of the PivotViewer we designed a system that will help users to explore complex image data sets efficiently. Users are able to simultaneously view traditional data visualization, the corresponding descriptive statistics simultaneously with the underlying image data. Since any type of data visualization relies on a set of features that has been extracted from the images, we view the development of selected image analysis algorithms to be a core component of this research programme. The resulting interface will allow users to interactively analyse, sort, and annotate images.