

Chipster – user friendly DNA microarray analysis software

Aleksi Kallio, Jarno Tuimala, Taavi Hupponen, Petri Klemelä, Eija Korpelainen

(Aleksi.Kallio@csc.fi, Eija.Korpelainen@csc.fi)

The Finnish IT Center for Science CSC

Chipster (<http://chipster.csc.fi>) is a user friendly graphical software for DNA microarray data analysis. It offers a comprehensive collection of up-to-date analysis methods, including those from the R/Bioconductor, and it supports all the major DNA microarray platforms.

Preprocessing, statistical tests, clustering, and annotation are complemented with e.g. linear (mixed) models, bootstrapping hierarchical clustering results, and promoter analysis tools. In addition to showing images produced by the R/Bioconductor, Chipster can also produce interactive visualizations for hierarchical and SOM clustering, 2D and 3D scatter plots, histograms and time series plots.

Chipster is a Java based system where the graphical interface runs on user's computer and accesses server components to perform analysis runs and connect to external data sources. Chipster's user interface and the supporting infrastructure has been developed iteratively together with users from the start. Analyzing user feedback lead us to design a workflow system which functions under the data oriented user interface: as the user uses the analysis tools all the analysis steps are recorded as workflows. The workflows can be later rerun with different datasets, and they can be extended as they are simple Java/BeanShell scripts. The individual analysis tools are functionally quite large, because this results in simpler workflows which was considered as a major usability gain by the users.

Chipster is published under GPL (see <http://chipster.sourceforge.net>).