

**GAAS: GENE ARRAY ANALYZER SOFTWARE. A MULTI-USER PLATFORM FOR MANAGEMENT, ANALYSIS AND VISUALIZATION OF GENE EXPRESSION DATA FROM REPLICATED EXPERIMENTS.**

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Availability of gene sequences identified by many genome projects and improvements of nanotechnology have made high-throughput experiments a powerful tool to study the differential expression of thousands of genes at once. Nevertheless, these experiments produce a huge amount of data presenting variability of gene expression levels and noise. An adequate software framework is therefore required to manage and analyze these data in order to mine new biological information. GAAS, Gene Array Analyzer Software, a new database-based application providing efficient management and appropriate analysis of a great quantity of gene expression data from replicated experiments, is described. A management structure, based on a database system, provides flexibility to handle data from distinct high-throughput technologies. A multi-user environment enables each user to perform parametric gene differential expression analyses and to store in output databases the own analysis parameter used and the obtained results. Implemented analysis algorithms permit background and spot quality evaluation, data normalization, and assessment of gene expression ratios also across multiple replica experiments. An intuitive user interface enables interactive browsing of expression profiles and analysis results, providing visualization of identified candidate regulated gene data both in tabular and graphical form. GAAS is freely available for academic and non profit use, and it can be downloaded at <http://www.medinfopoli.polimi.it/GAAS/>.