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(54) Title: STATISTICAL MODELING TO ANALYZE LARGE DATA ARRAYS

(57) Abstract: A method for analyzing large data arrays is provided. In one aspect, the invention provides a method for analysing data from two or more data arrays. Each array includes a plurality of members, each member provides a signal, and the data is indexed by one or more parameters. In one embodiment, the method includes fitting a model to the data; determining the goodness of the fit by evaluating the statistical significance of the fit; and determining the statistical significance of the signal. In another embodiment, the method further includes correcting the data for heterogeneity among members prior to fitting the model to the data.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/27273

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : G06G 7/48, 7/60; G06F 19/00 US CL : 702/19; 703/2, 11; 717/104 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 702/19; 703/2, 11; 717/104 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	GEX-FABRY et al. Considerations on data analysis using computer methods and currently available software for personal computers. Handbook on Exper. Pharmacol. , 1994, volume 110, pages 507-527, especially pages 511-519.	1-7, 9, 14-15, 22-24, 26-28, 52-53 ----- 8, 10-13, 16-21, 25 13, 25
Y	ENSLEIN, K. The future of toxicity prediction with QSAR. J. Molec. Cell. Toxicol., 1993, volume 6, No. 3, pages 163-169, especially pages 164-166.	10-12, 16-21
Y	US 5,639,619 A (CHEN et al.) 17 June 1997, column 2, lines 18-40	8
Y	US 5,909,278 A (DEKA et al.) 01 June 1999, columns 2-3	
☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.		
* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		
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Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer <i>Valerie Bell-Harris for</i> Marjorie Moran Telephone No. (571) 272-1600	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/27273

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-28 and 52-53

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.