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Facharbeit in Informatik (3KP) Datenbanktechnologie

Topic: Multiple linear regression in databases

Linear regression is one of fundamental statistical techniques. Multiple linear regression is a regression model when one (dependent) variable Y depends on several other (independent) variables X with a linear function of dependence. This approach is commonly used in econometrics to find properties of quantitative and qualitative economic relationships.

While this technique has been introduced in a lot of statistical packages it is desirable to implement an efficient algorithms of multiple linear regression inside a DBMS to process large data sets without copying the data and using third-party applications.

The tasks of the work are as follows:

1. Literature study on multiple regression [Joseph M. Hellerstein, Christopher Ré, Florian Schoppmann, Daisy Zhe Wang, Eugene Fratkin, Aleksander Gorajek, Kee Siong Ng, Caleb Welton, Xixuan Feng, Kun Li, Arun Kumar: The MADlib Analytics Library or MAD Skills, the SQL. PVLDB 5(12):1700-1711 (2012)]
2. Implementation of the multiple linear regression method using DBMS (PostgreSQL)
3. Creation artificial data for experiments and conduct experiments to identify properties of implemented algorithm
4. Elaboration of advantages and disadvantages of the implemented method, with illustration by examples
5. Writing report of approx. 10 pages on the results



Supervisor: Oksana Dolmatova

Start date: 25.04.2014

End date: 25.07.2014

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A handwritten signature in blue ink, appearing to be 'MB', written over a horizontal line.

Prof. Dr. Michael Böhlen