

# Scaling measurement patterns thanks to genetic algorithms

*Bakker & Co demonstrate, how they implemented a program for analyzing measured values using Java*

NORTHORN, LOWER SAXONY, GERMANY, January 23, 2023 /EINPresswire.com/ -- In the beginning there was the sense, where the thoughts eluded the concrete namability. Because it is as clear as day that no language is innate in humans.

Language is the medium of the thinking and opens our horizon. This complexity allows us to leave the present and describe other worlds. The abstract thought "[Project measured value analysis. Programming with Java without databases](#)" gives you the opportunity to deal with it, in order to find solutions to problems. A fundamental translatability is available for open communication

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The mechanisms of evolution, which made possible the emergence and development of life on our earth, are no longer just the concern of biologists.”

*Hartmut Bakker*

and reflection, because a scientific analysis without differentiations is just also not very useful for political action.

However, nowadays the range of tasks is very large and the number of existing procedures is almost unmanageable. The basic idea is to understand the adaptation that takes place in nature, as an optimization concept in order to cope with complex optimization problems. Genetic algorithms work with a certain number of artificial

chromosomes, which are each bit strings of fixed length. The chromosome structure is parameterized by an evaluation function, in which every parameter has a constant number of bit places.

Learning effect for programmers:



Simulations of an artificial evolution can also be achieved with a "[Project measured value analysis. java programming without / with databases](#)". This is based on an abstraction and generalization of the population concept, in that elements of the search space are encoded by genetic material. For this purpose, the population is subjected to a biological evolution, which includes the selection, the recombination and the reproduction with inheritance and mutation as elements.

The broad applicability is due to the robustness of the algorithm, which on the one hand does not make any assumptions about the degree of difficulty and on the other hand works with a number of admissible solutions. The factual situation is also used for parameter optimization in mathematical models, whereby several ways to the optimum are tried, which at the same time corresponds to a biological model formation. This way the knowledge is distributed in the population, with what premature convergence can be prevented during the optimization.

About the authors:

It should take a piece of injustice, because sustainability is a search process that is never completed. At the same time, the term "[Project measured value analysis: java programming without / with databases](#)" gains importance due to the reference to the phenomenon of modern society with its historical dimensions. Conceivable tasks include finding new organizational forms, which correspond to the increased needs and dependences.

Nevertheless the runtimes of genetic algorithms can be uncomfortably long. Therefore these should not be used at topics for which traditional optimization methods already exist. Application patterns are parameter optimization of machine parts but also route problems e.g.



when laying conductor tracks on circuits, packing problems e.g. when placing containers on watercraft or the search for rule-based systems, that value both economic and political tendencies.

>> Direct link to this book publication: [www.grin.com/de/e-book/90729/](http://www.grin.com/de/e-book/90729/)  
(ISBN 978-3-640-10033-0) (eBook-Price EUR 29,99 / Book-Price EUR 39,99)

>> German translation: [www.pressefeuer.at/?s=Messwertanalyse](http://www.pressefeuer.at/?s=Messwertanalyse)

The book was published by GRIN publishing house in July 2008.  
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On March 11, 2009, I completed my studies in information technology with a focus on information electronics at the Bielefeld University of Applied Sciences. In the "Networked Simulation" department of the University of Applied Sciences, I created a measured value analysis as a student research project.

The actual focus here is data transfer from various database management systems, also with large data volumes, to the free software package Scilab (<https://en.wikipedia.org/wiki/Scilab>). For this purpose, the project measured value analysis was adapted to the Scilab 5.2.1 internal JRE 6 and now includes an excel- and database-supported Java program with simulations of measurement series. In general, it integrates database management systems like Microsoft SQL Server, Oracle Database, MySQL as well as PostgreSQL and integrates Scilab.

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This press release can be viewed online at: <https://www.einpresswire.com/article/611621918>

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