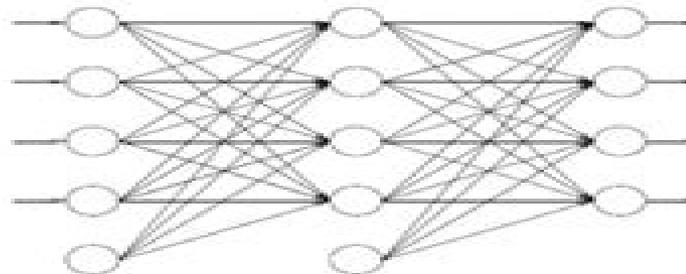


IMPLEMENTATION OF A FAST ARTIFICIAL NEURAL NETWORK LIBRARY (FANN)

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Abstract

This report describes the implementation of a fast artificial neural network library in ANSI C called *fann*. The library implements multilayer feedforward networks with support for both fully connected and sparse connected networks. *Fann* offers support for execution in fixed point arithmetic to allow for fast execution on systems with no floating point processor. To overcome the problems of integer overflow, the library calculates a position of the decimal point after training and guarantees that integer overflow can not occur with this decimal point.

The library is designed to be fast, versatile and easy to use. Several benchmarks have been executed to test the performance of the library. The results show that the *fann* library is significantly faster than other libraries on systems without a floating point processor, while the performance was comparable to other highly optimized libraries on systems with a floating point processor.

Keywords: ANN, artificial neural network, performance engineering, fixed point arithmetic, ANSI C.

Fast Artificial Neural Network Library Fann

Tay Leng Phuan



Fast Artificial Neural Network Library Fann:

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Fast Learning Artificial Neural Networks for Classification Tay Leng Phuan,1994 **Artificial Neural Networks**

Ivan Nunes da Silva,Danilo Hernane Spatti,Rogério Andrade Flauzino,Luisa Helena Bartocci Liboni,Silas Franco dos Reis Alves,2016-08-24 This book provides comprehensive coverage of neural networks their evolution their structure the problems they can solve and their applications The first half of the book looks at theoretical investigations on artificial neural networks and addresses the key architectures that are capable of implementation in various application scenarios The second half is designed specifically for the production of solutions using artificial neural networks to solve practical problems arising from different areas of knowledge It also describes the various implementation details that were taken into account to achieve the reported results These aspects contribute to the maturation and improvement of experimental techniques to specify the neural network architecture that is most appropriate for a particular application scope The book is appropriate for students in graduate and upper undergraduate courses in addition to researchers and professionals

Reviewing **Fast Artificial Neural Network Library Fann**: Unlocking the Spellbinding Force of Linguistics

In a fast-paced world fueled by information and interconnectivity, the spellbinding force of linguistics has acquired newfound prominence. Its capacity to evoke emotions, stimulate contemplation, and stimulate metamorphosis is actually astonishing. Within the pages of "**Fast Artificial Neural Network Library Fann**," an enthralling opus penned by a highly acclaimed wordsmith, readers attempt an immersive expedition to unravel the intricate significance of language and its indelible imprint on our lives. Throughout this assessment, we shall delve into the book's central motifs, appraise its distinctive narrative style, and gauge its overarching influence on the minds of its readers.

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