



MIMOS Accelerator Library (Mi-AccLib)

The digital data explosion has exceeded petabytes and entered the zettabyte era, resulting in a big data challenge. MIMOS Mi-AccLib offers parallelised data analysis to enable ultra-speed big data processing across a heterogeneous platform.

Overview

MIMOS Mi-AccLib is an accelerator library designed to enable ultra-speed big data processing with data and process parallelism. This MIMOS proprietary software library offers a heterogeneous hardware accelerated computing environment to leverage hardware acceleration through parallelisation. The library capitalises on different processor capabilities while maintaining application usage needs to parallelise data analysis.

Features

Mi-AccLib comprises the following features:

■ Text/String Analytics

This text/string library encompasses functions such as data matching, sorting, transformation, bitmapping, table operations (single/multiple columns key), date-searching and data cleansing. An application example is database data matching and cleansing using edit distance algorithm.

■ Financial Computation Algorithms

Financial applications can also be compute-intensive. Mi-AccLib offers optimisation on calculations such as Value-at-Risk (VAR), data aggregation, conversion, equity, interest-rate yield factor and Monte Carlo.

■ Generic Parallelised Library

The generic library provides generic APIs used for common functions such as sort and transform. It also includes specialised interfaces for security such as encryption/decryption functionalities, and various search/sort/transform algorithms.

■ Future Enhancements

A Parallel In-Memory Database library will offer the IMDB GPU platform to users with improved common operations for relational databases. For the image and video library, customised intrusion and motion detection features with functions such as dilation and erosion filters, connected component labelling and background subtraction are to be included.

Technology Benefits

The main impacts of Mi-AccLib are:

■ Ultra-Speed Data Processing

Mi-AccLib covers several areas for compute-intensive data such as financial and text/string operations and allows for users to directly use Mi-AccLib APIs for specific application needs, which run on multi-core CPU or GPGPU.

■ Transparent Heterogeneous Hardware Support

Mi-AccLib APIs are designed to be processor agnostic and can run across different hardware platforms with ultra-speed processing capabilities but still guarantees the reliability of the data.

Technology Summary

Mi-AccLib

An accelerator library that capitalises on different processor capabilities while maintaining application usage needs by parallelising data analysis and processing.

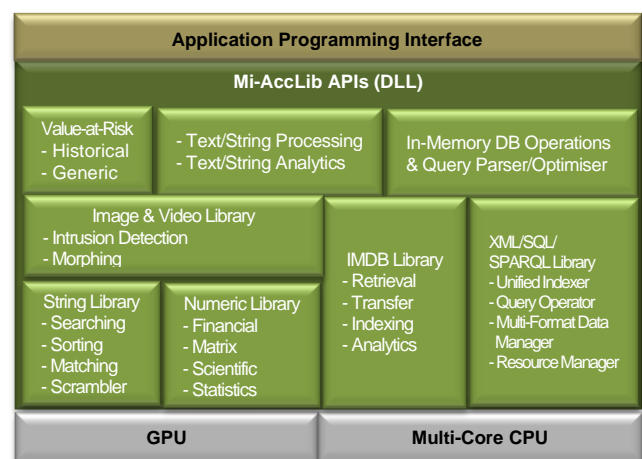
Industries: Enterprise, Government, Finance

Features

- Text/String analytics
- Financial computation algorithms
- Generic parallelised library
- Future enhancements

Technology Benefits

- Ultra-speed data processing
- Transparent heterogeneous hardware support



MIMOS Mi-AccLib system architecture

System Requirements

Mi-AccLib	
Hardware Requirements	
Processor	Quad-Core (minimum)
Memory	Minimum 12GB of RAM memory
Disk Storage	Minimum 200GB of hard disk space
System Requirements (Windows)	
Operating System	Windows® Server 2008 R2 (64-bit)
GPU	Minimum 1 CUDA®-enabled NVIDIA® Graphic Card installed (compute capability at least 2.0)
	CUDA Toolkit
	NVIDIA GPU Computing SDK
	NVIDIA NSight

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