MIGA Documentation

Release 1.0.0

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Contents:

CHAPTER 1

Introduction

MIGA is a Python package that provides a MSA (Multiple Sequence Alignment) mutual information genetic algorithm optimizer. It sorts two MSAs in a way that maximize or minimize their mutual information. The genetic algorithm solvers may run on both CPU and Nvidia GPUs.

CHAPTER 2

Requirements

- Python version 3+
- GCC and G++
- Numpy

CHAPTER 3

Optional requirements

- CUDA capable GPU with compute capability >= 3.0
- CUDA Toolkit version 9+
- Cython 0.22+

CHAPTER 4

Instalation

4.1 CUDA builds

For CUDA enabled installation, make sure the `CUDA_HOME` is set and pointing to a valid CUDA 9+ installation root.

4.2 Pip

Run `pip install miga`

4.3 Distributed packages

1. Download the latest release.
2. Run `pip install miga.version.tar.gz`

4.4 From source

1. Make sure Cython version 0.22+ is installed
2. Clone this repository
3. Run `git submodule update --init --recursive` to update submodules
4. Optionally set the environment variable `CUDA_HOME` to point to your CUDA Toolkit installation
5. Run `pip install miga/package`

CHAPTER 5

Usage

Plese refer to the examples folder and to online documentation to learn how to use this package.

CHAPTER 6

Bugs and feature requests

Please report bugs and feature requests through the Issues page.

CHAPTER 7

Benchmark

7.1 MIGA user reference

`MIGA`	Mutual Information Genetic Algorithm main class.

CHAPTER 8

Indices and tables

- genindex
- modindex
- search