english | castellano

Gga4r, General Genetic Algorithms for Ruby

Introduction

General Genetic Algorithms for Ruby is a Ruby Genetic Algorithm so simple to use:

1. Take a class to evolve it and define fitness, recombine and mutate methods.

```
class StringPopulation < Array
    def fitness
      self.select { |pos| pos == 1 }.size.to_f / self.size.to_f
    end

    def recombine(c2)
      cross_point = (rand * c2.size).to_i
      c1_a, c1_b = self.separate(cross_point)
      c2_a, c2_b = c2.separate(cross_point)
      [StringPopulation.new(c1_a + c2_b),
       StringPopulation.new(c2_a + c1_b)]
    end

    def mutate
      mutate_point = (rand * self.size).to_i
      self[mutate_point] = 1
    end
end
```

2. Create a GeneticAlgorithm object with the population.

```
def create_population_with_fit_all_1s(s_long = 10, num = 10)
    population = []
    num.times  do
        chromosome = StringPopulation.new( Array.new(s_long).collect \
                                           { (rand > 0.2) ? 0:1 } )
        population << chromosome
    end
    population
end

ga = GeneticAlgorithm.new(create_population_with_fit_all_1s)
```

3. Call evolve method as many times as you want and see the best evolution.

```
100.times { |i|  ga.evolve }
p ga.best_fit[0]
```

Install

1. Execute:

```
gem install gga4r
```

2. Add require in your code headers:

```
require "rubygems"
require "gga4r"
```

Attention

Please note that Gga4r adds `shuffle!`, `each_pair` and `separate` methods to the Array class.

Documentation

Documentation can be readed online in gga4r rdoc or generated using rdoc tool under the source code with:

```
rdoc README lib
```

Contributing

gga4r developer loves beer, if this library has been useful for you or you want to support it, invite him a beer!

Beer 2€ 

Copying

This work is developed by Sergio Espeja (sergio.espeja [you_know] gmail.com) mainly in Institut Universitari de Lingüística Aplicada of Universitat Pompeu Fabra (www.iula.upf.es) supported by Núria Bel, and also in bee.com.es (bee.com.es).

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