	18/10/24 PAGE: DATE:/		
	Genetic Algorithm:		m play
ad for	import transform		Ret
	der johners punction (x):		doj go
	mutation rate = 0.1	7,000	jos.
	num generations = 50		D
	Upper bound = 10		
	dej-generale population (rize lower bound, upper bound):		
	dej-general-population (rize, lower bound, upper bound): Deturn Crandom uniforn (lower bound, upper bound) per —in rang (lize)]		3
	des evaluate population (population): oceture (fitness punction (ind) jor ind in population)		3
	des select parents (population, fitnesses):		2005
A. O. S.	dej seleil parents (population, fitnesses); total fitness: rum (fitnesses) selection probs = L-f/total jetness for f in fitness] parent1 = random choices (population, weight = reliction probs, K=1)[0]		be
	probs, K=1) [0]		bert-
	parent 2 = random choices (population, weight = relection prob		print (
	dej Corossones (parent I, parent 2, crossover role):		
	if random orandom () < Cross over grate: Cerossover point: orandom orandom ()		
	child 2 = crossover point * parent 2 + (1 - Grossover	point) & po	rtut 3
	John child! Child?	- P.	esent 1
	return parent 1, parent 2		And a contract of the contract

	j random random () < mutation rate; individual = random cuniform Clause bound, upper bound):
	ij Jandom G (mutation rate;
	individual = random uniform Chang bound, upper-bound
	return individual
	des genetic-algorithmes: population (population size, lower bound,
	upper bound)
1	sof generation in rapse (num appelations):
	jorgeneration in range (num generation): jitnes = evaluate population (population)
	new population = []
	while lentnen population < population size:
1 10	barent 1 based 2 = belock based to de 1 him il
	parent I, parent 2 = scleet parent (population, jitnes) child I, child 2 = Crossoner (parent I, parent 2, Grossoner vot)
	parent 2, Grandly Yary
	child 1 = mutate (child 1, mutation rate, lower bound, upper bound
	child 2 : mulato (child2, medation rate, lower bound, upper bound)
1 2	new-population extend ([child], child 2]
	population = new population : population size] line sitney: evaluate - population (population)
	Topological Control of the Control o
	Best individual = population [jinal - jitney. index (max (jinal fitney.))]
	bes gitners=max (-final jitners)
	had tal has had filmed best fitners
	best-solution, best fitness = genetic algorithm ()
	print (f" Best dolution found 3 heat of obution?")
	print (f" Fitner of the best solution; & best jitners?")
	All 1
	O P - O MARIO PROPERTY SECTION A
	Best Solution jound - 9, 93965641726559
at & par	Best Solution jound: 9,93965641726559 Fitness on the best solution: 98,79676932
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