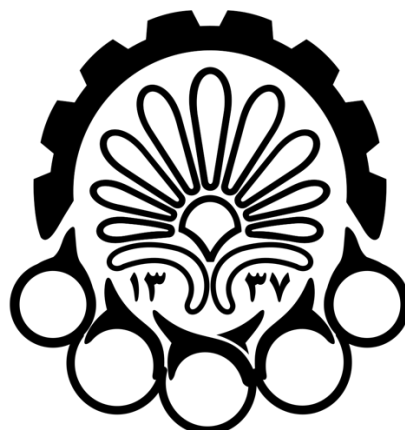به نام خدا

دانشگاه صنعتی امیرکبیر

(پلی تکنیک تهران)

پروژه‌ی دوم درس هوش مصنوعی و کاربردهای آن: الگوریتم‌های تکاملی (ژنتیک)

استاد درس: دکتر بهنام روشن‌فکر
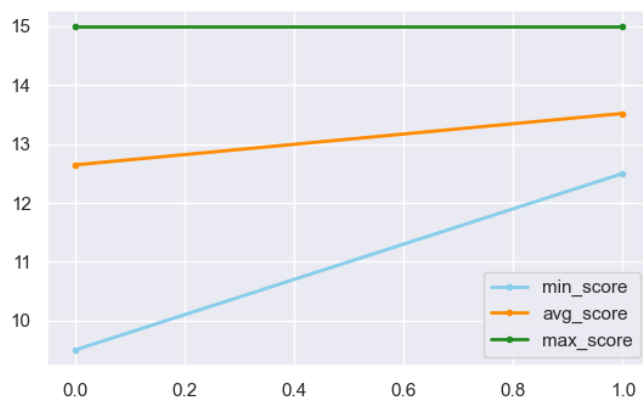
دانیال حمدی – ۹۷۳۱۱۱۱

بهار ۱۴۰۰

گزارش کار

برنامه را با استفاده از دو روش گفته شده در صورت پروژه، برای ورودی‌های مختلف آزمایش می‌کنیم.
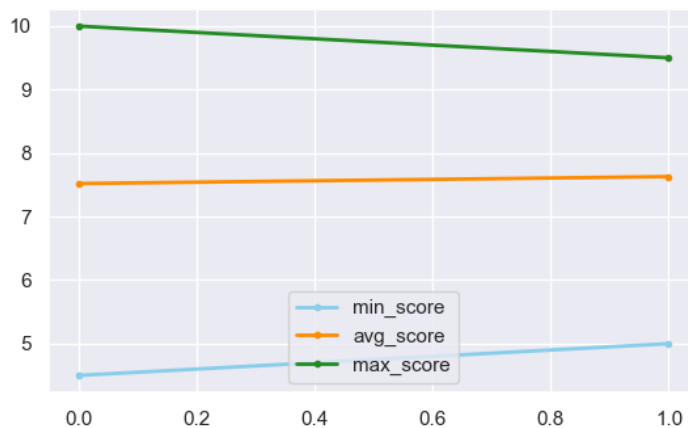
آزمایش سطح ۱ بازی:

روش اول:

Fitness Function: fitness_fn_with_winning, Selection Function: half_select
Reproduction Function: single_point_crossover, Mutation Function: unbiased_mutate
Mutation Probability: 0.1, Num Generations: 500
Convergence Epsilon: 1e-06, Mutation Aggression: 0.5
Convergence: False, First Generation with Solution: 0
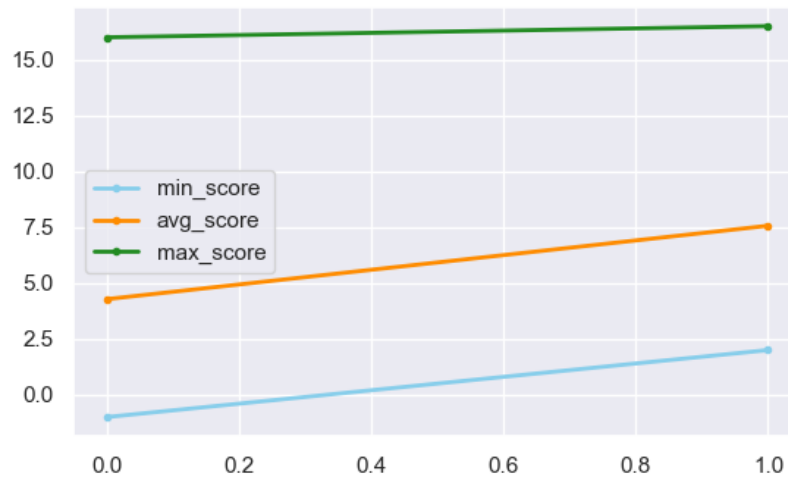Solution: 10010101

روش دوم:

Fitness Function: fitness_fn_without_winning, Selection Function: weighted_select
Reproduction Function: two_point_crossover, Mutation Function: unbiased_mutate
Mutation Probability: 0.5, Num Generations: 500
Convergence Epsilon: 1e-06, Mutation Aggression: 0.5
Convergence: False, First Generation with Solution: 0
Solution: 20010012

روش اول:

Fitness Function: fitness_fn_with_winning, Selection Function: half_select
Reproduction Function: single_point_crossover, Mutation Function: unbiased_mutate
Mutation Probability: 0.1, Num Generations: 500
Convergence Epsilon: 1e-06, Mutation Aggression: 0.5
Convergence: False, First Generation with Solution: 0
Solution: 21210022021

روش دوم:

Fitness Function: fitness_fn_without_winning, Selection Function: weighted_select
Reproduction Function: two_point_crossover, Mutation Function: unbiased_mutate
Mutation Probability: 0.5, Num Generations: 500
Convergence Epsilon: 1e-06, Mutation Aggression: 0.5
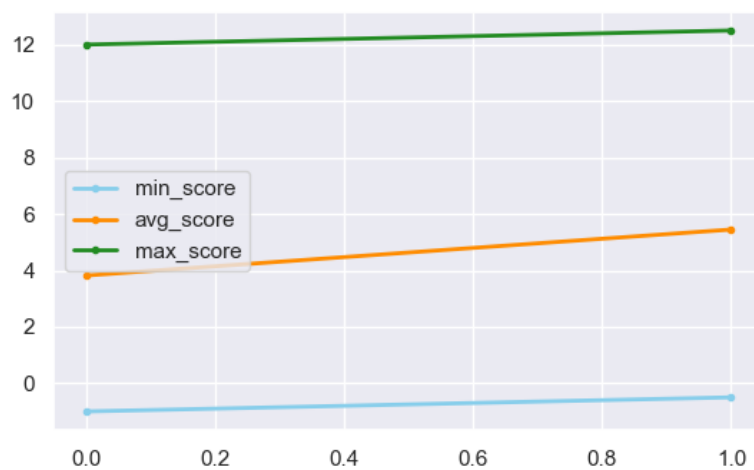Convergence: False, First Generation with Solution: 0
Solution: 01021222212

روش اول:

Fitness Function: fitness_fn_with_winning, Selection Function: half_select
Reproduction Function: single_point_crossover, Mutation Function: unbiased_mutate
Mutation Probability: 0.1, Num Generations: 500
Convergence Epsilon: 1e-06, Mutation Aggression: 0.5
Convergence: False, First Generation with Solution: 20
Solution: 100121021020000100012220012220102200101200212120110100222002120121010001211
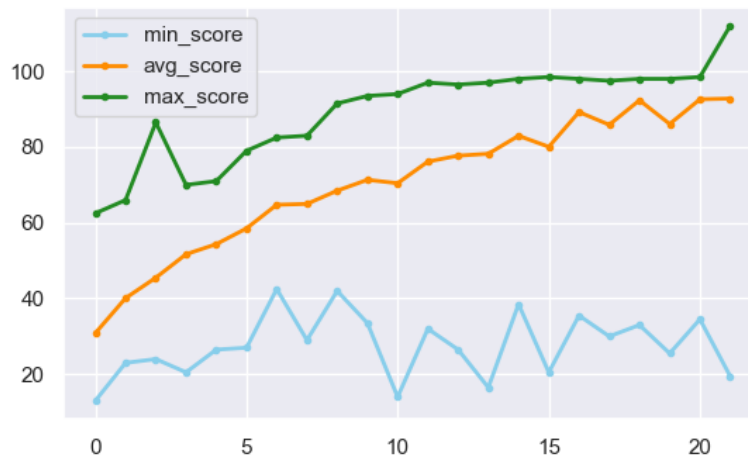
روش دوم:

Fitness Function: fitness_fn_without_winning, Selection Function: weighted_select
Reproduction Function: two_point_crossover, Mutation Function: unbiased_mutate
Mutation Probability: 0.5, Num Generations: 500
Convergence Epsilon: 1e-06, Mutation Aggression: 0.5
Convergence: False, First Generation with Solution: 31
Solution: 11212222212222121022022222110121121012220122210010110212201202111222112002002
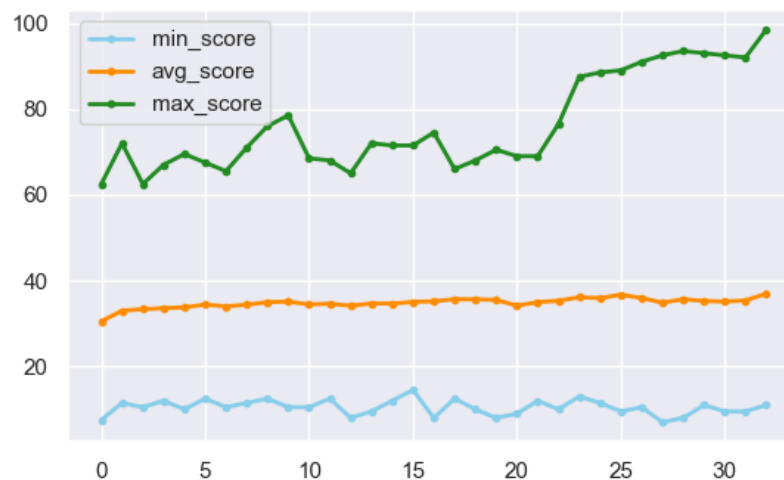
آزمایش برای سطح ۱۰ بازی:

روش اول:

Fitness Function: fitness_fn_with_winning, Selection Function: half_select
Reproduction Function: single_point_crossover, Mutation Function: unbiased_mutate
Mutation Probability: 0.1, Num Generations: 500
Convergence Epsilon: 1e-06, Mutation Aggression: 0.5
Convergence: False, First Generation with Solution: 12
Solution: 11101122022220101220021112010022221120012212212202211000122010220110022210
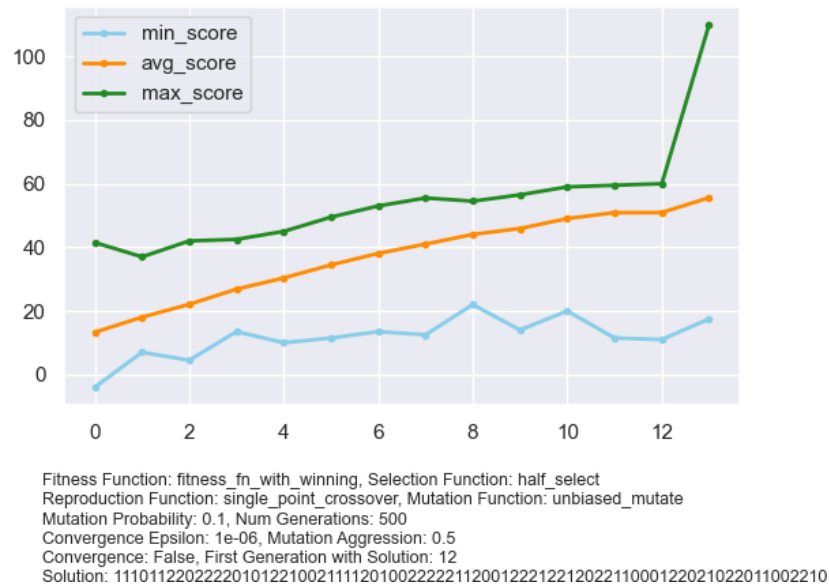
روش دوم:

Fitness Function: fitness_fn_without_winning, Selection Function: weighted_select
Reproduction Function: two_point_crossover, Mutation Function: unbiased_mutate
Mutation Probability: 0.5, Num Generations: 500
Convergence Epsilon: 1e-06, Mutation Aggression: 0.5
Convergence: False, First Generation with Solution: 70
Solution: 100110022220120011021102020200211112021211120112120200100220111010221012101110