

Genetic manipulation

Parent A

```

816   damageInflicted +=
        mWeapons[i][j]->Damage();
1056  if(damager->GetPlayer()
        ->GetPlayerHuman() {
1057  ContactCallback();
    
```

Parent B

```

899   for (unsigned int i = 0;
        i < mModules.size(); ++i ) {
900   mModules[i]
        ->NotifyDamagedComponent(damager)
    
```

Crossover operation (Fusion)

```

816   damageInflicted +=
        mWeapons[i][j]->Damage();
1056  if(damager->GetPlayer()
        ->GetPlayerHuman() {
1057  ContactCallback();
899   for (unsigned int i = 0;
        i < mModules.size(); ++i ) {
900   mModules[i]
        ->NotifyDamagedComponent(damager)
    
```

Mutation operation (Subtractive)

CF1

```

816   damageInflicted +=
        mWeapons[i][j]->Damage();
1057  ContactCallback();
899   for (unsigned int i = 0;
        i < mModules.size(); ++i ) {
    
```

Fitness assessment

$$P(\text{damag} \mid CF_n)$$

0.38	0.3	0.72	...	0.39
0.12	0.87	0.5	...	0.32
0.67	0.7	0.14	...	0.21
0.02	0.58	0.29	...	0.7
...
0.25	0.62	0.02	...	0.01
CF ₁	CF ₂	CF ₃	...	CF _n

0.04	0.41	0.2	...	0.01
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$$P(Q \mid CF_2) =$$

$$\text{Sim}(Q \mid CF_2) =$$

Fitness(CF₂)

Topic Modeling - output

Φ θ

Term - Topic probability distribution	Topic - Code Fragment probability distribution
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Query - processed Requirement

damag, amount,
inflict, *object,*
caus, notifi, modul