Engineering optimization can be obtained using an analogy with the optimization of the Neural Network.

In the modern world is necessary using less material, reducing friction, reduce the use of the energy, to reduce the pollution on the Earth.

It is simple to optimize a complex system (like a car, a airplane, a chip, an analog circuit, a mechanical piece, alloy and thermal process, superconductor composition, solar cell composition) mathematically modeling the system with a set of continuous parameters (for example shapes, electric impedances and graphs, element percentages), so that an evolution strategy can be applied:

$$\alpha_{t+1}^s = \alpha_t^s + \mu_t\ \alpha_t^s$$

if there is an error function in the real world (for example the energy consumption, energy produced by a solar cells), then the error function can be minimized using a random variation of the parameters, that model the real object with an error function in the real world: if robots are used in the random production, the evolution can be accelerated.

More parameters are used, the more the system can adapt genetically to the reality.