# Research and Development of an Optimization System based on Evolutionary Computation Techniques

**Project Leader**
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## 1. Objective

**This project is aimed at:**

Investigating the evolutionary computation algorithm modeled on the evolutionary process, we have succeeded in developing an algorithm for a practical engineering application. In this approach, we will propose and verify a resolution algorithm that considers the problem of optimization of system parameters. Target applications are production systems, health care systems and appearance inspection systems. Our intelligent computer programs will be able to implement much more powerful evolutionary computation algorithms in addition to the conventional "Soft Computing".

## 2. Project Outline

**To that end, the project will consist of the following phases:**

(a) The development/design/creation of the evolutionary computation techniques and a target application.
(b) The creation of a working model/prototype and test/evaluation
(c) Perform and verify the computer simulation of (b)

## 3. Expected Performance

**In this project, the successful candidate would be expected to:**

(a) Working independently, develop/design/create the intelligent systems.
(b) Assist the senior members with the development/design/creation/testing of the computer programming.
(c) Provide supervision for special evolutionary computation for target optimization problems.
(d) Perform routine work in terms of maintenance/set-up/repair/development of the development process using optimization problems.

## 4. Required Skills and Knowledge

**The successful candidate for this project will have the following knowledge and skills:**

(a) terminal operation of Linux OS.
(b) discrete mathematics, finite mathematics, statistics.
(c) C and C++ languages for computer programming.

## References

[1] J. Kushida, I. Nakaoka, K. Kamei, N. Taniguchi and Y. Hoshino:A Coevolutionary System for Strategy Development in Poker Games
International Journal of Innovative Computing, Information and Control, Vol. 4, No. 12, pp. 3259-3272 (2008)
[2] J. Kushida, I. Nakaoka, K. Kamei and Y. Hoshino: Application of Co-Evolutionary System for Strategy Developments of Teams in the Same Generation to Team Match-Up Games
International Journal of Innovative Computing, Information and Control, Vol. 5, No. 12 (2009)

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