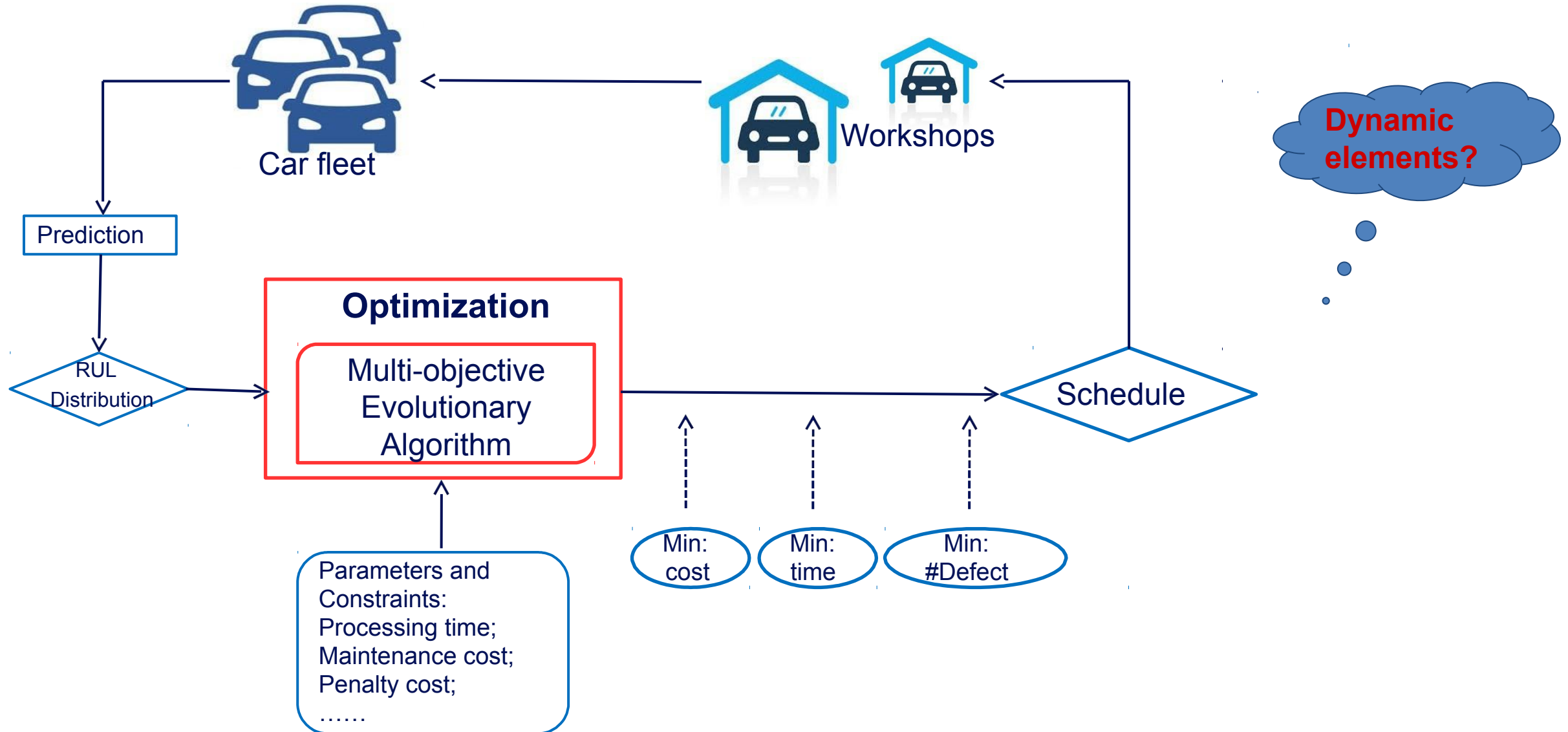# Honda Vehicle Fleet Maintenance Scheduling Optimization (VFMSO)

Master project 1:

Dynamic VFMSO:

(1) Read doctoral thesis[1] and our paper on VFMSO[2].
(2) Decide which dynamic elements should be considered in VFMSO (for example, the car is broken before its scheduled maintenance time.), and define dynamic VFMSO.
(3) Propose the dynamic algorithm and define the performance metric.
(4) Apply the dynamic algorithm on dynamic VFMSO.
(5) Measure the performance of dynamic algorithm and compare with non-dynamic algorithm.

[1] Yang, Zhiwei. Meta-heuristics for vehicle routing and inventory routing problems. Diss. 2016.
[2] Wang, Y., Limmer, S., Olhofer, M., Emmerich, M.T. and Bäck, T., 2019, June. Vehicle Fleet Maintenance Scheduling Optimization by Multi-objective Evolutionary Algorithms.In Evolutionary Computation (CEC), 2019 IEEE Congress on (in press). IEEE.

Master project 2:

DI-MOEA[1] is a newly proposed multi-objective evolutionary algorithm (MOEA).

(1) Compare DI-MOEA with NSGA-III (and other state-of-the-art MOEAs).
(2) Choose and decide the benchmark problems and metrics.
   Both continuous and discrete problems(VFMSO is possible); Hypervolume indicator and….
(3) Choose and decide the proper platform the experiments will be implemented on:
   1) MOEA framework (java:http://moeaframework.org/)
   2) PlatEMO (matlab: https://github.com/BIMK/PlatEMO)

[1] Wang, Y., Emmerich, M., Deutz, A. and Bäck, T., 2019, March. Diversity-Indicator Based Multi-Objective Evolutionary Algorithm: DI-MOEA. In International Conference on Evolutionary Multi-Criterion Optimization (pp. 346-358). Springer, Cham.