**Research about usage of heuristic optimization algorithms for feature selection**

1. Particle Swarm Optimization (PSO)
2. Artificial Immune System (AIS)
3. Artificial Bee Colony optimization (ABC)
4. Ant Colony Optimization (ACO)
5. Elephant Herd Optimization (EHO)

**Particle Swarm Optimization: -**

* It replicates the behaviour of a swarm of insects or a school of fish.
* It is motivated from foraging and social behaviour of swarms.
* The solutions are evaluated and they are compared and new solutions are generated in the process to find an optimal solution for the given problem.
* PSO starts with initializing population randomly.
* Each solution in PSO is referred to as particle.
* There are 3 distinct features of PSO: -
  + Best fitness of each particle.
  + Best fitness of swarm.
  + Velocity and position update of each particle.
* pbest(i): The best solution (fitness) achieved so far by particle i.
* gbest(i): The best solution (fitness) achieved so far by any particle in the swarm.
* Velocity and position update: For exploring and exploiting the search space to locate the optimal solution.
* Tuning parameters required for implementation: -
  + Population size
  + Termination criteria
  + Acceleration coefficients, c1, c2
  + Inertia

**Artificial Immune System: -**