

Solving Mean Field Problems: A Survey of Numerical Methods and Applications

Authors : Amal Machtalay

Abstract : In this survey, we aim to review the rapidly growing literature on numerical methods to solve different forms of mean field problems, namely mean field games (MFG), mean field controls (MFC), potential MFGs, and master equations, as well as their corresponding recent applications. Here, we distinguish two families of numerical methods: iterative methods based on mesh generation and those called mesh-free, normally related to neural networking and learning frameworks.

Keywords : mean-field games, numerical schemes, partial differential equations, complex systems, machine learning

Conference Title : ICAM 2023 : International Conference on Applied Mathematics

Conference Location : Istanbul, Türkiye

Conference Dates : May 04-05, 2023