
BIHAI SU, Shanghai University of Finance and Economics

Solving a Seal's type partial integro-differential equation with general jump by employing deep neural networks

In this paper, we study the problem of the Seal's type equation under the classical compound Poisson risk model. We propose a data-driven deep neural networks (DNNs) method to calculate the finite time survival probability. An alternative scheme under the exponential claim distribution is also discussed. This method is extended to the numerical solution of generalized partial integro-differential equations. Finally, the numerical approximation results under different claim distributions are given. Numerical results show that the proposed scheme can obtain accurate results under different claim distributions and has better computational efficiency.