

## String Pattern Recognition Using Evolving Spiking Neural Networks and Quantum Inspired Particle Swarm Optimization

### Abstract:

This paper proposes a novel method for string pattern recognition using an Evolving Spiking Neural Network (ESNN) with Quantum-inspired Particle Swarm Optimization (QiPSO). This study reveals an interesting concept of QiPSO by representing information as binary structures. The mechanism optimizes the ESNN parameters and relevant features using the wrapper approach simultaneously. The N-gram kernel is used to map Reuters string datasets into high dimensional feature matrix which acts as an input to the proposed method. The results show promising string classification results as well as satisfactory QiPSO performance in obtaining the best combination of ESNN parameters and in identifying the most relevant features.