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(57) Abstract :
In Vitro Fertilization (IVF) treatment is a complex process with numerous variables influencing its success. Traditional approaches to optimizing IVF treatment often rely on static guidelines and expert intuition, which may not fully account for the individual variability among patients. This project proposes a novel approach to optimizing IVF treatment by leveraging advanced Reinforcement Learning (RL) techniques, specifically Proximal Policy Optimization (PPO), to enhance decision-making in personalized treatment plans. The proposed system utilizes a policy network architecture to model palicnt-3peoific-data,J.ncJnding_age1 genetic markers, and hormone levels. The network comprises an input layer to assimilate patient data, two hidden layers 'with*_R'elSU activation functions to capture intricate interactions, and an output layer to represent actionable treatment decisions such as medication dosages and procedure scheduling. The model's efficacy is evaluated through a comprehensive training process involving interaction with a simulated IVF environment.

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