

# AI Algorithms and Stochastic Game-play

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## ORAL Innovation

Solving Stochastic Problem-Spaces, which have large branching factors, require specialized algorithms to deal with. We investigated Poker Squares, and many variations thereof, to determine an ideal algorithmic approach. We implemented and evaluated several designs: Rule-Based, Expectimax, Monte Carlo Simulation based Reinforcement Learning, State Evaluation, and Upper Confidence Threshold (UCT) Policies. In this presentation we describe our implementations of these designs, as well as the results of a tournament-style competition. The results are used to determine the best algorithm design for the specific problem found within Poker Squares. The algorithms that are designed, and the problem space of Poker Squares, are analyzed with respect to the real world.