1. Record Nr. UNISA996587860603316

Autore	Hartisch Michael
Titolo	Advances in Computer Games : 18th International Conference, ACG 2023, Virtual Event, November 28-30, 2023, Revised Selected Papers
Pubbl/distr/stampa	Cham : , : Springer, , 2024 ©2024
ISBN	3-031-54968-6
Edizione	[1st ed.]
Descrizione fisica	1 online resource (176 pages)
Collana	Lecture Notes in Computer Science Series ; ; v.14528
Altri autori (Persone)	HsuehChu-Hsuan SchaefferJonathan
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Chess and Its Variants -- Making Superhuman AI More Human in Chess -- 1 Introduction -- 2 Background -- 3 Methodology -- 3.1 Training Our Baseline Engines -- 3.2 Experimental Procedure -- 3.3 Performance Metrics -- 4 Implementation and Results -- 4.1 Fixed-Depth Search -- 4.2 Depth Ensemble Model -- 4.3 Evaluation Window Model -- 5 Discussion -- 6 Conclusions and Future Work -- References -- Merging Neural Networks with Traditional Evaluations in Crazyhouse -- 1 Introduction -- 2 Implementation of CrazyRabbit -- 2.1 Monte Carlo Tree Search -- 2.2 Deep Neural Network -- 2.3 Training Data and Supervised Learning -- 2.4 Evaluation Function and Hybrid Approach -- 3 Self-play Experiment -- 4 Experiment with Fairy-Stockfish -- 5 Go-Deep Experiment -- 6 Average Move Score Deviations -- 7 Conclusion -- References -- Stockfish or Leela Chess Zero? A Comparison Against Endgame Tablebases -- 1 Introduction -- 2 Related Work -- 3 Background -- 3.1 Endgame Tablebases -- 3.2 Stockfish -- 3.3 Leela Chess Zero -- 4 Dataset and Evaluation Method -- 4.1 Dataset Generation and Preprocessing -- 4.2 Engine Settings -- 5 Experimental Results -- 5.1 Wrong Play Analysis -- 5.2 Improvement Analysis After Incorporating Search -- 5.3 Engine Behaviour Analysis in Positions with a Single Pawn for the Weaker Side -- 6 Conclusion and Future Work -- References -- Solving Games -- Solving NoGo on Small Rectangular

Boards -- 1 Introduction -- 2 Related Work -- 3 Sorted Bucket Hash and Its Use in Solving Games -- 3.1 Boolean Negamax Search and Heuristics -- 3.2 A Transposition Table with Perfect Hashing -- 4 NoGo Results and Solution Analysis -- 4.1 44 NoGo -- 4.2 55 NoGo -- 4.3 Solutions of Rectangular NoGo Boards -- 5 Summary and Future Work -- References -- Optimal Play of the Great Rolled Ones Game -- 1 Introduction -- 2 Rules.
3 Optimality Equations and Solution Method -- 4 Optimal Policy -- 5 Komi -- 6 Human-Playable Policies -- 6.1 Roll with 4 or 5 Dice Policy -- 6.2 Fixed Hold-At Policy -- 6.3 Simple Player and Ones Cases -- 6.4 Keep Pace, End Race, by Case -- 7 Future Work -- 8 Conclusions -- References -- Board Games and Card Games -- MCTS with Dynamic Depth Minimax -- 1 Introduction -- 2 Background -- 3 Dynamic Depth Minimax -- 3.1 Analysis of Terminal Lines -- 3.2 Analysis and Discussion -- 4 Dynamic Depth Models and Benchmarks -- 4.1 Strongest Fixed Depth Model -- 4.2 Adjusting Dynamic Depth Models -- 4.3 Analysis of Results -- 5 Conclusion -- References -- Can We Infer Move Sequences in Go from Stone Arrangements? -- 1 Introduction -- 2 Problem Formulation -- 3 Background -- 3.1 Related Work -- 3.2 Simulated Annealing -- 4 Simulated Annealing for Inferring Go Move Sequences -- 5 Experiments -- 5.1 Experiment Settings -- 5.2 Main Results -- 5.3 Selected Move Sequences -- 5.4 Ablation Studies -- 6 Conclusions -- References -- Quantifying Feature Importance of Games and Strategies via Shapley Values -- 1 Introduction -- 2 Notation and Background -- 2.1 Extensive-Form Games -- 2.2 Exploitability -- 2.3 Counterfactual Regret Minimization (CFR) -- 2.4 Abstraction -- 2.5 Feature Importance and Shapley Value -- 3 Related Work -- 4 Descriptions of Our Methods -- 4.1 Shapley Game Feature Importance -- 4.2 Shapley Strategy Feature Importance -- 5 Experiments -- 5.1 Goofspiel -- 5.2 SGFI of Goofspiel -- 5.3 SSFI of Goofspiel AI -- 6 Conclusion -- References -- Player Investigation -- The Impact of Wind Simulation on Perceived Realism of Players -- 1 Introduction -- 1.1 Wind Simulation in Games -- 2 The Game -- 2.1 Game Design -- 3 Study -- 3.1 Method -- 3.2 Result -- 3.3 Discussion -- 4 Conclusion -- References.
Hades Again and Again: A Study on Frustration Tolerance, Physiology and Player Experience -- 1 Introduction -- 2 Related Work -- 3 Methods and Materials -- 3.1 The Game -- 3.2 Protocol -- 4 Results -- 4.1 Features Extraction -- 4.2 Analysis -- 5 Discussion and Conclusions -- References -- Math, Games, and Puzzles -- Analysis of a Collatz Game and Other Variants of the 3n+1 Problem -- 1 Introduction -- 2 The 3n1 Game -- 3 Game Variants -- 4 Collatz Variants and a General Conjecture on Convergence -- 5 Convergence in a Stochastic Variant of the Collatz Problem -- 6 Discussion, Open Problems, Prizes -- A Random Walks with Drift -- References -- Implicit QBF Encodings for Positional Games -- 1 Introduction -- 2 Preliminaries -- 3 Maker-Breaker Explicit-Board Encodings -- 3.1 Explicit-Board, All-Goals: (EA) -- 3.2 Implicit-Goal Representations -- 4 Implicit-Board Encodings -- 4.1 Lifted Neighbor-Based Encoding (LN) -- 4.2 Lifted Transversal-Based Encoding (LT) -- 4.3 Stateless Neighbor-Based (SN) -- 5 Implementation and Evaluation -- 5.1 Size of the QBF Encodings -- 5.2 Solver Performance for Various Encodings -- 6 Conclusion and Future Work -- References -- The Mathematical Game -- 1 Introduction -- 2 Holophrasm and Metamath -- 2.1 Metamath -- 2.2 Classical Holophrasm -- 3 Classical Tree Search Algorithm for Metamath Theorem Proving -- 3.1 Minimax -- 3.2 PUCT -- 3.3 Product Propagation -- 3.4 Proof Number Search -- 3.5 HyperTree Proof Search -- 4 New Tree Search Algorithm for Metamath

Theorem Proving -- 4.1 Production Propagation Combined with PUCT -- 5 Conclusion -- References -- Slitherlink Art -- 1 Introduction -- 2 Prior Work -- 2.1 Deductive Search -- 2.2 Difficulty -- 2.3 Interestingness -- 3 Approach -- 3.1 Boundary Repair -- 3.2 ASCII Art Sources -- 4 Challenge Generation -- 4.1 Repeated Hint Patterns -- 4.2 Radial Hint Patterns.
4.3 Spiral Hint Patterns -- 4.4 Subtractive Hint Patterns -- 4.5 Pictorial Hint Patterns -- 5 Summary -- 6 Conclusion -- References -- Author Index.