

Spiele in der Informatik

09. Oktober 2018

1 Themes

Below are the topics for this winter semester seminar course: “Games in Computer Science” (“Spiele in der Informatik”). This list also includes the difficulty and the planned date associated with each of the topics. As for the index on difficulty, a ★-topic is relatively easier than a ★★★-topic.

- THEMA 1: The Nash equilibrium [13]. ★
- THEMA 2: Hackenbush game and the surreal numbers [1, 4]. ★
- THEMA 3: Solving Matrix Games by linear programming [13]. ★★
- THEMA 4: The Alpha-Beta pruning algorithm [13]. ★★
- THEMA 5: Bisimulation game [16]. ★
- THEMA 6: Branching bisimulation games [6]. ★★
- THEMA 7: Parity games [2]. ★★★
- THEMA 8: Minesweeper is NP-complete [11]. ★
- THEMA 9: Concurrent reachability games [5]. ★★
- THEMA 10: Rush hour is PSPACE-complete [7]. ★★
- THEMA 11: Alpha Go [14, 15]. ★★
- THEMA 12: Auctions [3, 17]. ★★
- THEMA 13: A Compositional Approach to Economic Game Theory [8]. ★★
- THEMA 14: Zero knowledge protocol [9]. ★★
- THEMA 15: Game theoretic semantics of logic [10]. ★★
- THEMA 16: Graph search algorithms [12]. ★★

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