Spiele in der Informatik

13. Oktober 2025

Themenliste

Folgende Themen können im Seminar 'Spiele in der Informatik' im Wintersemester 2025/26 vergeben werden. Jede Zeile beinhaltet den Titel des Themas, Referenzen zu möglichen Quellen und eine grobe Einschätzung zur Schwierigkeit des Themas. Ein ★-Thema ist einfacher als ein ★★★-Thema. Die Termine der entsprechenden Vorträge richten sich im Groben nach der Sortierung der Themen.

- Einführung in die Spieltheorie
  1. Grundlagen der Spieltheorie und das Nash-Equilibrium [1] ★
  2. Matrix-Spiele und lineare Programmierung [1] ★
  3. Der Minimax-Algorithmus und Alpha-Beta-Pruning [1], [2] ★
- Fixpunkttheorie und Zwei-Spieler-Spiele
  4. Bisimulationsspiele [3], [4] ★★
  5. Energy Games [5], [6] ★
  6. Einfache stochastische Spiele [7], [8] ★★
  7. Paritätsspiele [9] ★★★
- Weitere Spiele
  8. 'Cops and Robbers' auf Graphen [10] ★★
  9. Nebenläufige Erreichbarkeitsspiele [11] ★★
  10. Routing-Spiele [12] ★★★
- Verwandte Themen
  11. Zero-Knowledge-Protokolle [13]–[15] ★★
  12. Auktionstheorie [16], [17] ★★
  13. AlphaGo [18], [19] ★★★
- Komplexitätsanalyse von Spielen
  14. Minesweeper ist NP-vollständig [20] ★★
  15. Rush Hour ist PSPACE-vollständig [21] ★★
  16. Tetris ist NP-vollständig [22] ★★★

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