

INTRO/ABSTRACT

We will create, train, and communicate with a deployed AI model to enable a person to play games of chess online solo. Artificial intelligence models can be customized to fit the rules of a chess game, and therefore, it can simulate potential moves that the user can make. From there, a model can return very accurate moves that provide a strong challenge to the user. Because of this, it will be possible to deploy an AI model such that a person can play a challenging game of chess by themselves.

METHODS

Both the website and AI model are written in JavaScript due to its widespread use and support in web development. For specifically the front-end development, a combination of HTML and CSS are used in conjunction with JavaScript and the ReactJS framework to create an engaging and user-friendly set of web pages. The artificial intelligence model incorporates advanced AI techniques specifically geared towards working with chess. First, the AI model stores an “opening book” known competent openings, which allows the AI to start the game with a variety of moves. Second, the AI calculates moves on-demand. The alpha-beta-pruning variant of the minimax algorithm is used for generating lines of potential moves and selecting best lines based on the evaluation of that line’s final board position, and a predefined criteria has been employed to determine each final board’s evaluation measurement. Third, the AI model can be modified to adjust its difficulty to cater to users of all skill levels.

RESULTS

With the completion of these project components, we have implemented an efficient, accessible, and usable chess game with artificial intelligence integration.

We have created a playable AI chess engine using AWS EC2 instances.

The AI model is hosted on a website, built with ReactJS and hosted on GitHub.



Play it Here, On Our Project Website