

# Creating virtual chess commentators using neural networks

Subtitle

## **Abstract**

This paper deals with the question of how neural networks can be used to create a comprehensive analysis of chess games, which can be used to generate textual, human-understandable, commentary. In particular, we will look at what is needed to represent a chess board that can be used by the neural network to plan and compare moves in order to make an appropriate evaluation of a game of chess. Based on this, we will then explore how the neural network can convert the evaluation into natural language that humans can understand.

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Max Semdner

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# 1 Introduction

In the mid-20th century, computer chess experienced its first breakthroughs thanks to the work of scientists like Alan Turing and Claude Shannon. Alan Turing, the pioneer of artificial intelligence, was convinced that games were an ideal model system for machine learning. This prediction has come true, and machine learning has grown to be an essential part of any chess engine today. Although chess engines have become a powerful tool, they have a lack of transparency regarding the moves they perform. Therefore, professional chess players and commentators are often needed to explain the intention of these moves. This dependence on human chess commentators can be a drawback, since moves found by computers can be misinterpreted and, above all, appear incomprehensible to non-professional chess players. In the following, I will address the question of how to overcome this intransparency using machine learning and create a virtual chess commentator that translates the engines intentions into human-understandable language.