Chess Engine and TPU
Project Abstract
10/18/2022
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We are going to build a TPU that supplements a chess engine. A chess engine is made of two parts:

1. Position evaluator; Takes a board position and returns a numerical estimate of the advantage each side has, we will use a CNN on the TPU.
2. Move generator; Takes a board position and plays the possible moves, this is done at a shallow depth (2 or 3 moves into the future). Then we send the board to the position evaluator to find the value of playing that sequence of moves, so we can find the move with the highest advantage and return that.

We will divide the workload on two FPGAs along the above lines too, the Position evaluator will be a more general TPU. We can use the TPU to implement a basic chess engine, we train a CNN (or another matrix-based ML algorithm) locally and upload the weights and biases to the TPU.

Muhammad Abdullah is planning to train the ML algorithm and implement a min-max tree traversal for the move generator, and Haihan Wu will implement the position evaluator (TPU) and interface between two FPGAs.