



# BethhtChess

Point your webcam to your chess board and get your next best move!





## Chess sets are flying off the shelves

A record 62 million households watched "The Queen's Gambit" in its first month. The show's streak as one of the most popular limited series on Netflix has also led to massive interest in chess-related items. Sales of chess sets went up by 87% in the US according to marketing research. Chess sets had

# The Queen's Gambit breaks records as Netflix's biggest ever limited series

- The Netflix series which was written
- Chess experts overall have praised the show as more believable than other on-screen adaptations of the sport.
- Although much of the show takes place in Kentucky, it wasn't a success in the US.
- Anya Taylor-Joy, Harry Melling, and Thomas Brodie-Sangster all

A record-setting 62 million households chose to watch "The Queen's Gambit" in its first 28 days, making it Netflix's most scripted limited series to date.



## The show's message resonates with women -- and parents

Chess has traditionally been seen as a cerebral -- okay, nerdy -- game mostly for men. Anya Taylor-Joy, widely considered the greatest female player and coach at age 15, believes the Netflix series can

# Front End Technology

1. Figma - Used for prototyping the front end
2. ReactJS - Used for making the website
3. HTML5 + CSS3 + Fomantic-UI
4. React-webcam
5. Styled-components
6. Framer-motion



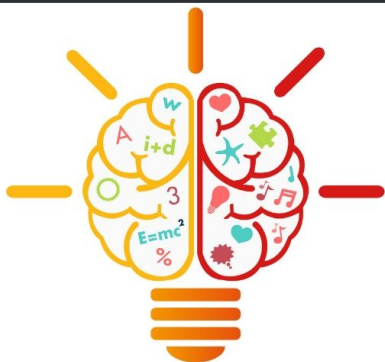
# Back End Technology

1. **openCV** - Convert image to an ortho-rectified chess board
2. **Kaggle** - Data set which has 100,000 chess board images
3. **Keras** - Deep Learning (DL) model to predict FEN string
4. **Stockfish.js** - The most powerful chess engine
5. **NodeJS** - To link front-end, DL model and Stockfish



# Advantages

1. **Learning** - Transfer board positions from hardcover and online books, movies and live games at anytime, from anywhere!
2. **Accuracy** - With a well trained model we have a 95% accuracy. With more training this could well increase to ~100%
3. **Fun** - Be sneaky and surprise your friends by beating them in chess!



# Challenges

1. **Time zones** - stay resilient, optimistic, and determined to finish our project off with a bang!
2. **Learning Curves** for all of us - collaboration was key, share screens, ask mentors and dig deep into Google
3. **Varying skills** first-time hackers with only a few technologies in common - focus on what each one of us does best!



# Future Scope

1. **Social Impact** - Incorporate a voiceover feature to ensure people with disabilities can use our app
2. **Mobile** - Currently our project is based on a website, we would like to optimize it for mobile viewing
3. **Model Accuracy** - Improve the model by adding more training data
4. **Simpler & Faster UI**- return the next best move before you even realize!



**Thank you from the BETHT team**



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