

Assistive Chessboard
(Technical Report)

The Struggle over Artificial Intelligence in Healthcare
(STS Research Paper)

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by

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Preface

How can artificial intelligence systems better serve human needs? Developers strive to produce artificial intelligence (AI) for a range of applications from games to healthcare, but AI often encodes human biases.

AI can defeat human experts in chess and help players of all levels improve their skills. While most chess programs use digital chess boards, some use physical boards and pieces. Some interactive chess boards train players by recommending moves, but most cannot reliably detect chess pieces. An assistive chess board was designed in which magnets improve piece detection. LEDs display the AI engine's recommendations. A prototype was built and verified. It offers accurate, dynamic, and intuitive recommendations in real-time to one or more chess players. This project demonstrates that AI can be integrated into a complex game to provide tailored feedback for users of all skill levels.

To resist discriminatory biases encoded in medical AI, U.S. advocates of healthcare equity use a variety of strategies. Most researchers propose improvements to the currently ineffective federal regulations on AI development. Others demand legal accountability in AI, voluntary ethics pledges, incentives, or AI audits. These methods may mitigate AI biases pending effective federal regulation and may cultivate ethical practices in the AI community.