Artificial intelligence could aid in evaluating parole decisions
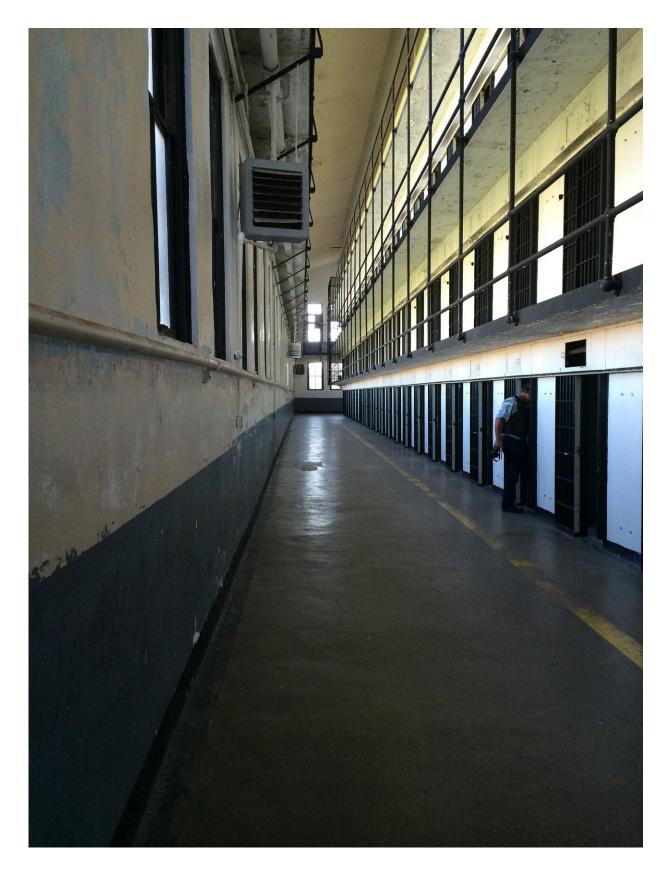
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Over the last decade, there has been an effort by lawmakers to reduce incarceration in the United States without impacting public safety. This effort includes parole boards making risk-based parole decisions—releasing people assessed to be at low risk of committing a crime after being released.

To determine how effective the current system of risk-based parole is, researchers from the UC Davis Violence Prevention Research Program and the University of Missouri, Kansas City, used machine learning to analyze parole data from New York.

They suggest the New York State Parole Board could safely grant parole to more inmates. The study, "An Algorithmic Assessment of Parole Decisions," was published in the *Journal of Quantitative Criminology*.

"We conservatively estimate the board could have more than doubled the release rate without increasing the total or violent felony arrest rate. And they could have achieved these gains while simultaneously eliminating racial disparities in release rates," said Hannah S. Laqueur, an assistant professor in the Department of Emergency Medicine and lead author of the study.

According to the Bureau of Justice Statistics, by the end of 2021, the [prison population](#) for state, federal and military correctional facilities in the U.S. was 1,204,300.

Methods

The team used the machine-learning algorithm SuperLearner to predict

any arrest, including a violent felony arrest, within three years of an individual being released from prison.

The algorithm looked at 91 variables to predict crime risk. These included age, minimum and maximum sentence, prison type, race, time in prison, previous arrests and other criteria.

The researchers trained their risk-prediction models on data from 4,168 individuals who were released on parole in New York between 2012 and 2015.

The authors implemented several tests to validate the algorithm on the full population of individuals up for parole. This included individuals who had hearings and were denied parole by the board but were later released at the end of their maximum sentence (6,784 individuals).

Results

The machine learning [algorithm](#) found the predicted risks for those denied parole and those released are very similar. This suggests that low-risk individuals may have remained incarcerated, while high-risk individuals were released.

The authors note they are not advocating replacing human decision-makers with algorithms to assess who should be released from [prison](#). Instead, they see a role for algorithms to diagnose problems in the current parole system.

"This study demonstrates the utility of algorithms for evaluating criminal justice decision-making. Our analyses suggest that many individuals are being denied parole and incarcerated past their minimum sentence despite being a low risk to public safety. We hope that by providing data on predicted risks, we can aid reform efforts," Laqueur said.

More information: Hannah S. Laqueur et al, An Algorithmic Assessment of Parole Decisions, *Journal of Quantitative Criminology* (2022). DOI: 10.1007/s10940-022-09563-8

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