THE HONG KONG POLYTECHNIC UNIVERSITY
DEPARTMENT OF MANAGEMENT AND MARKETING
Departmental Research Seminar

AI Enforcement: Examining the Impact of AI on Judicial Fairness and Public Safety

By

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Date : 30 May 2024 (THU)
Time : 10:30 am – 12 noon
Venue : R502

Abstract

State judicial systems in the U.S. face the challenge of managing an overwhelming prison population and record-high incarceration costs. To alleviate these challenges, judicial systems are increasingly adopting artificial intelligence (AI) for recommending alternative punishments with the purpose of diverting low-risk offenders away from jail based on their recidivism risk. However, the impacts of such AI initiatives on judges' decision-making, fairness towards offenders, and public safety remain unknown. This presentation covers our attempt at studying those impacts. Using a regression discontinuity design and a unique dataset consisting of 27,357 sentencing cases in Virginia over close to a decade, we show that the introduction of AI recommendations significantly increases the probability of receiving alternative punishment, lowers the probability of incarceration, and shortens the length of imprisonment. More importantly, we find that AI recommendations may affect judicial fairness in differing directions. While judges are typically more lenient toward female offenders compared to males, AI helps alleviate such gender-based disparity. On the other hand, judges stay fair when sentencing risky offenders, yet, we find evidence of a racial bias favoring White offenders over Black ones, even after both groups receive alternative punishment recommendations from AI. We last analyze the societal impact of judges' decisions based on offenders' recidivism. We show that judges' leniency towards risky females might be justified from a public safety perspective, but their bias towards less risky white offenders hurts public safety. Accordingly, we provide actionable implications for the public, judges, and policymakers to promote judicial fairness with AI support.

Dr Yi-Jen (Ian) Ho joined the Freeman School in 2023 from Penn State University, where he served as an assistant professor of Information Systems. He is interested in understanding the impacts of emerging information technologies. His current research focuses on location-based services and advertising, online platforms, and artificial intelligence. He applies various methods to obtain insights and identify causalities, including game-theoretic modeling, econometrics, randomized experiments, and machine learning. His research has appeared in premier business journals, including *Information Systems Research* and *Production and Operations Management*. He received the Gordon B. Davis Young Scholar Award in 2022 and the Nunamaker-Chen Dissertation Award in 2017 from the INFORMS Information Systems Society. His research has also earned best paper awards and nominations at major conferences, including INFORMS Information Systems and eBusiness Sections, WISE, and WeB. He has served as a special-issue senior editor at *Production and Operations Management* and as a cluster co-chair, associate editor, and program committee member for leading conferences. He holds a B.B.A. from the National Central University, an M.S. in Management Information Systems from the University of Arizona, and a Ph.D. in Information Systems from the University of California – Irvine.

All interested are welcome.

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