

# The Hong Kong University of Science and Technology

Dept of Information Systems, Business Statistics and Operations Management

Dept of Industrial Engineering & Decision Analytics

Joint Seminar Announcement



## Does AI Reduce Inequality? A Study with a New Occupational AI Exposure Measure

by

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**Date** : 23 February 2024 (Friday)  
**Time** : 10:30 – 11:45 AM  
**Venue** : Room 4047, LSK Business Building



**Abstract:** A central concern regarding artificial intelligence (AI) is its potential to replace jobs and exacerbate economic inequality. However, recent research argues that AI may provide a path to decrease inequality through a Turing Transformation process: AI simplifies work, reduces barriers to job entry, and consequently widens job opportunities for more workers. In this paper, we empirically test the Turing Transformation theory by examining AI's deskilling and job opportunity effects. We develop a novel occupational AI exposure index using a sentence transformer model to compare the semantic similarity between the occupation descriptions (what people do) and AI patents (what AI technologies do). We find that, on average, occupations with higher AI exposure experience a decrease in the importance for a wide range of work activities, along with an increase in job postings and employment. This provides the first empirical evidence for the existence of the Turing Transformation process. However, the beneficial job opportunity expansion effects are absent for low skill occupations. For high skill occupations, as their AI exposure increases, we observe large increases in job postings but little changes in actual employment, suggesting a talent gap for high-skilled workers due to AI.

The paper is downloadable from [SSRN](#).

**Bio:** Prof. Tingliang Huang is a Professor and the Amazon Distinguished Professor of Business Analytics at the Haslam College of Business, University of Tennessee (UT), and the Business Analytics PhD Program Recruiting Lead. He is also an Honorary Professor at UCL School of Management, University College London (UCL), the United Kingdom. He is an award-winning scholar & educator. He is interested in business analytics, AI, data science, new business models, operations-marketing interface, supply chain management, service operations, innovation, and socially responsible operations. His research articles have been published in top business journals such as Manufacturing & Service Operations Management, Marketing Science, Management Science, and Production and Operations Management. He has won various research & teaching awards including the 2023 INFORMS Workshop on Data Science Best Paper Award, 2018 POMS Wickham Skinner Early Career Research Accomplishments Award, the 2018 Most Influential Paper Award in Service Operations (joint paper with Professor Ying-Ju Chen at HKUST), the 2015 Wickham Skinner Best Paper Award, the Teaching Star Award, among others. He was the William S. McKiernan Family '78 Faculty Fellow & tenured associate professor at the Carroll School of Management, Boston College, Chestnut Hill, MA.

He is currently an Associate Editor for Manufacturing & Service Operations Management, Service Science, Decision Sciences, Naval Research Logistics, and IISE Transactions, and a Senior Editor for Production and Operations Management. He received his doctorate from the Kellogg School of Management, Northwestern University, master's from the University of Minnesota, Minneapolis-Saint Paul, and bachelor's from the University of Science and Technology of China (USTC).

All interested are welcome!

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