Jingpeng Hong

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Summary

PhD student at Harvard with 5+ years of experience combining machine learning, deep learning, and statistical econometric methods to help firms optimize and automate their business decisions.

Research expertise in digital marketing, advertising, recommender systems and online experimentation.

Proficient in Python (PyTorch, TensorFlow, CausalML, scikit-learn), R, SQL, MATLAB, Stata and Git.

Experience

Harvard Business School | Doctoral Researcher   2022 - present

Research Paper: What Is a Customer Worth to Algorithms? *[HBS Marketing Seminar 2024]*

- Proposed novel interpretable machine learning algorithms to quantify customers' information value using Shapley value, achieving equivalent recommendation accuracy with 50% fewer samples.
- Implemented causal machine learning algorithms, such as causal forests and doubly robust learner, to estimate heterogeneous treatment effects of advertisements using CausalML in Python.
- Evaluated policy learning methods with simulations and ad targeting data, showing classification-based methods can fail when treatment effects are frequently zero.
- Built robust supervised learning models to denoise conditional average treatment effect estimates and increase the targeting accuracy by 8%.

HKTVmall | Academic Collaborator   2022 - present

Research Paper: Beauty in a Spectrum of Sizes: Sales Impact of Advertising Models' Body Shape

[Marketing Science Conference 2024, Conference on Information Systems and Technology 2024 (long presentation)]

- Created a large-scale transaction and clickstream database from web sessions on an e-commerce platform with 1.5 million monthly active users, using cloud storage and MySQL for efficient data management.
- Leveraged scalable PyTorch computer vision algorithms to extract interpretable facial characteristics and product features from 160,000 apparel images.
- Applied causal inference models with observational data to demonstrate that featuring inclusive body shapes in advertising increases daily sales by 8.9%.
- Designed Qualtrics experiments and created stimuli using text-to-image generative models to show that perceived product match boosted click-through rates without impacting the conditional conversion rate.

Peking University | Undergraduate Researcher   2018 - 2022

Publication: Long-Term Care Insurance and the Well-Being of Older Adults and Their Families

Xiaoyan Lei, Chen Bai, Jingpeng Hong, and Hong Liu, *Social Science & Medicine*, 2022, 296: 114745 [Link].

- Created a database of health outcomes and spending from a nationwide longitudinal survey covering 14,000 households over 20 years.
- Designed the causal inference strategy that identified a 23.5% reduction in out-of-pocket expenditure due to public intervention in long-term insurance markets, contributing to health policy discussions.

Education

Harvard Business School | M.S. Management Research   2022 - 2025

  - *Ph.D. coursework and research in Quantitative Marketing*

University of Chicago | M.A. Economics   2021 - 2022

Peking University | B.A. Economics, National School of Development   2017 - 2021

Honors & Awards

Marketing Science Doctoral Consortium Fellow (2023, 2024); Harvard Graduate Fellowship (2022 - 2025); Phoenix Research Award Scholarship, UChicago (2021); Peking University Outstanding Graduate (2021)