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## EDUCATION

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Doctor of Philosophy, Marketing, 2024 (Expected).  
Ivey Business School, Western University.  
Dissertation Chair: Xin (Shane) Wang  
Committee Members: June Cotte, Avi Goldfarb, Guneet Kaur Nagpal

Bachelor of Arts, Honors Business Administration, 2019.  
*Graduated with Distinction*, Ivey Business School, Western University

## RESEARCH INTEREST

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My research interests are focused on Machine Learning, AI, unstructured data (e.g., text, images, and audio) and online word of mouth. In my research, I strive to empirically model the causal impact of user-generated content. Also, I am interested in developing new metrics and methodological tools for manager to employ.

- Substantive Interests: Online WOM, Digital Platform, Intangible Assets
- Method: Machine Learning, Econometric model, Field Experiment

## PUBLICATIONS (SEE APPENDIX FOR ABSTRACTS) \* denotes equal contribution.

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Eunsoo Kim, MengQi (Annie) Ding, Shijie Lu and Xin (Shane) Wang (2023), "Does Topic Consistency Matter? A Study of Critic and User Reviews in the Movie Industry", *Journal of Marketing*, 87(3), 428-450.

- Selected Media Coverage: AMA, Notre Dame News

MengQi (Annie) Ding\* and Avi Goldfarb\* (2023), "The Economics of Artificial Intelligence: A Marketing Perspective", *Review of Marketing Research*, Vol 20, 13-26.

- Special Issue on Artificial Intelligence in Marketing

## WORKING PAPERS (SEE APPENDIX FOR ABSTRACTS)

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Ding, MengQi (Annie) and Xin (Shane) Wang, "The Effect of Image-Audio Emotional Similarity on NFT Product Sales" (**Job Market Paper**), expected submission to *Marketing Science*, July 2023.

Ding, MengQi (Annie), Shirley Chen, Xin (Shane) Wang and Neil Bendle, "The Impact of Image Content for Online Reviews", under 3<sup>rd</sup> round revision at *Journal of Consumer Research*

Ding, MengQi (Annie), BingQing Li and Xin (Shane) Wang, "Fact or Opinion: Investigating the Effect of Headlines on Online Engagement and Approval".

## WORKING IN PROGRESS

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“Empowering Learning through Optimized Assignments: An Empirical Study from China’s Universities”, with Xintong Han

## CONFERENCE PRESENTATIONS

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*Presenting Author is Underlined*

MengQi (Annie) Ding, BingQing Li and Xin (Shane) Wang, “Fact or Opinion: Investigating the Effect of Headlines on Online Engagement and Approval”, Artificial Intelligence in Management Conference, March 16-17, 2023, hosted by USC Marshall

MengQi (Annie) Ding, Shirley Chen, Xin (Shane) Wang and Neil Bendle, “Show Me You or The Goods? Effect of Image Content on Review Helpfulness”, ACR Conference 2021, October 28-30, 2021, hosted virtually

MengQi (Annie) Ding and Xin (Shane) Wang, “Fact or Opinion: Investigating the Effect of Headlines on Online Engagement and Approval,” ISMS Marketing Science Conference 2021, June 3-5, 2021, hosted virtually by the Simon Business School, University of Rochester

MengQi (Annie) Ding, Xin (Shane) Wang, “Fact or Opinion: Investigating the Effect of Headlines on Online Engagement and Approval,” Artificial Intelligence in Management Conference 2021, May 14-15, 2021, hosted virtually by USC Marshall

MengQi (Annie) Ding, Shirley Chen, Xin (Shane) Wang and Neil Bendle, “Show Me You or The Goods? Effect of Image Content on Review Helpfulness”, Society for Consumer Psychology Conference 2021, March 4-6, 2021, hosted virtually

## HONORS AND AWARDS

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- INFORMS Marketing Science Doctoral Consortium, Fellow, University of Miami, 2023
- Marketing Strategy Consortium, Fellow, University of Georgia, 2023
- SSHRC Doctoral Fellowship (\$20,000), 2023
- Designing a Career in Marketing Academia - development program for junior female marketing scholars (invitational only), Vanderbilt University, 2022
- AMA-Sheth Foundation Doctoral Consortium, Fellow, University of Texas – Austin, 2022
- C.B. (Bud) Johnston Ontario Graduate Scholarship (\$10,000), Ivey Business School, Western University, 2021-23
- Ontario Graduate Scholarship (\$20,000), Province of Ontario, Canada, 2021-23
- Berdie & Irvin Cohen Doctoral Business Scholarship, 2021; \$2,500 (awarded to one student), Ivey Business School, Western University, 2021

## TEACHING EXPERIENCE

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**Teaching Assistant**, Ivey Business School, Western University.

Digital Marketing -Master level course for Prof. Xin (Shane) Wang, Summer 2022

- Judged student final presentations.

Social Media Analytics – Undergraduate for Prof. Xin (Shane) Wang, Summer 2020

- Collected and prepared social media data for classroom teaching

## DOCTORAL COURSEWORK

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### Marketing

Research Methods  
Theories of Marketing  
Experimental Design  
Consumer Behaviour  
Special Topics in Statistics  
Economics Models in Marketing  
Multi-Method and Empirical Modeling

Matthew Thomson  
Kersi Antia  
Matthew Thomson  
Miranda Goode  
Brandon Schaufele  
Rajdeep Grewal (UNC)  
Shane Wang

### Economics

Econometrics I  
Econometrics II  
Advanced Econometrics II  
Advanced Methods in Applied Economics  
Empirical Industrial Organization

Nail Kashaev  
Salvador Navarro  
Nail Kashaev  
David Rivers  
David Rivers

## SKILLS

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- Programming: Stata, R, and Python
- Language: Mandarin, English

## REFERENCES

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**Xin (Shane) Wang** (Chair)  
Professor of Marketing  
Graduate Program Director  
Pamplin College of Business  
Virginia Tech  
Email: xswang@vt.edu

**June Cotte**  
Kraft Professorship in Marketing  
Ivey Business School  
Western University  
Email: jcotte@ivey.uwo.ca

**Avi Goldfarb**  
Professor of Marketing  
Rotman Chair in Artificial Intelligence and Healthcare  
Rotman School of Management  
University of Toronto  
Email: avi.goldfarb@rotman.utoronto.ca

## ABSTRACTS

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“The Effect of Image-Audio Emotional Similarity on NFT Product Sales” (**Job Market Paper**), MengQi (Annie) Ding and Xin (Shane) Wang

Musicians are often left wondering how to design album art to attract sales. The general answer is that the album cover should “fit” the style of the song. However, what does this “fit” mean exactly is not clear. We propose that one element of the “matching in style” is emotional similarity between album cover art and the music, which is that the song and the album cover should evoke the same kind of emotional responses from the listeners. Building upon emotion theory and Transformer-based neural network model, we created a novel metric to measure emotional similarity between image and audio in accordance with the classic Pleasure-Arousal-Dominance (PAD) emotion model. Next, we collected an 18-month panel dataset from a large NFT trading platform. The panel dataset includes the weekly prices of 1,670 music NFTs. Further, we adopted both feature extraction and kernel PCA to control the image and audio features of these music NFTs. The findings show that greater image-audio emotional similarity leads to higher prices for music NFTs, and that this effect is positively moderated by NFT product rarity.

“The Impact of Image Content for Online Reviews”, MengQi (Annie) Ding, Shirley Chen, Xin (Shane) Wang and Neil Bendle, Under 3<sup>rd</sup> round revision at *Journal of Consumer Research*

Despite the increasing prevalence of images in online reviews, it remains unknown how the presence and content of images affect consumer decision-making. We collect five million Amazon reviews from 25 product categories, and show that review helpfulness was higher for reviews that were posted when Amazon’s image uploading tool was operational and for reviews with more images. Then, we build on communication theory to define three image content types—elaboration, extension, and enhancement—that provide different types of information to consumers. We use a deep learning approach to quantify the image content, and find that the helpfulness of the image content types seems to vary with the product type: elaboration (extension and enhancement) was more positively associated with review helpfulness in relatively hedonic (utilitarian) product categories. In controlled experiments, we use a causal chain approach to test the proposed mechanism, and provide evidence that elaboration images (extension and enhancement images) lead to relatively high-level (low-level) construal, and that high-level (low-level) construal leads to more favorable responses to a hedonic (utilitarian) orientation. Finally, we show that the inclusion of an image reduces decision difficulty and increases the purchase intention. We offer practical implications for review platforms, reviewers, product managers, and consumers.

“Fact or Opinion: Investigating the Effect of Headlines on Online Engagement and Approval”, MengQi (Annie) Ding, BingQing Li and Xin (Shane) Wang

Headlines play a vital role in online news, summarizing main ideas and attracting readers. Headlines allow readers to judge whether the news communicates facts or opinions and helps readers decide whether to read further. We investigate how the headline type—opinion-based versus fact-based—influences reader engagement and approval. We study the effects with field datasets from Reddit, featuring posts from the “COVID-19” forum and “racism” forum. Methodologically, we introduce Causal Embedding, a machine-learning-based text analysis method, to control for endogeneity in the article text so that we can identify the causal effects of the headline type. Consistent with our predictions, the use of an opinion-based headline rather than a fact-based headline involves a trade-off: it increases engagement by 13.6% (15.2%) of a standard deviation for COVID-19 posts (racism posts) and decreases approval by 7.0% (11.8%) of a standard deviation. We confirm the main effects in a controlled lab experiment. Our paper highlights the trade-off between engagement and approval,

demonstrates the relevance of headlines in digital content, and showcases a tool for controlling for textual data.

MengQi (Annie) Ding\* and Avi Goldfarb\* (2023), “The Economics of Artificial Intelligence: A Marketing Perspective”, *Review of Marketing Research*, Vol 20,13-26.

This article reviews the quantitative marketing literature on artificial intelligence (AI) through an economics lens. We apply the framework in Prediction Machines: The Simple Economics of Artificial Intelligence to systematically categorize 96 research papers on AI in marketing academia into five levels of impact, which are prediction, decision, tool, strategy, and society. For each paper, we further identify each individual component of a task, the research question, the AI model used, and the broad decision type. Overall, we find there are fewer marketing papers focusing on strategy and society, and accordingly, we discuss future research opportunities in those areas.

Eunsoo Kim, MengQi (Annie) Ding, Shijie Lu and Xin (Shane) Wang (2023), “Does Topic Consistency Matter? A Study of Critic and User Reviews in the Movie Industry”, *Journal of Marketing*, 87(3), 428–450.

Online review platforms often present reviews from both critics and general users. In this research, the authors propose a measure called “topic consistency” to capture the degree of overlap between critic and user review content. High topic consistency suggests greater information recall due to repeated presentation of the same topics, which may increase the memorability of movie attributes and therefore positively affect movie demand. The authors measure the topic consistency between critic and user reviews using topic models and further study the financial consequences of this measure using data for movies released in the United States. Topic consistency is positively associated with subsequent box office revenue, suggesting a positive relationship between topic consistency and movie demand. Furthermore, the effect of topic consistency on demand is the greatest for movies with mediocre review ratings and when the review ratings from critics are close to those from users. Using lab experiments, the authors provide evidence of the causal link between topic consistency and consumers’ willingness to watch a movie, and support for the potential mediation through the information recall of reviews. Movie producers and advertisers should consider highlighting or inducing a central theme for critics and users to discuss, as the more the review content of critics and users overlaps, the higher a movie’s revenue.