WBS-ESSEC-HEC Paris IS Workshop

11 November 2022
Warwick Business School

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Organizing Committee
Honorary Chairs:
Ram Gopal (WBS), Joe Nandhakumar (WBS), Hila Lifshitz-Assaf (WBS)

Workshop Chairs:
Melody Zou (WBS), Yi Ding (WBS), Zhewei Zhang (WBS)
Thomas Kude (ESSEC), Haris Krijestorac (HEC Paris)

Special thanks:
WBS ISM Group Office

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Program Rundown

	Activity	Venue
10 Nov (Thu)		
1830-	Welcome dinner	Scarman restaurant
11 Nov (Fri)		
845-900	Refreshment	Scarman space 34
900-950	Emotional Arcs and User Engagement with Rich Content on Social Media Platforms (HEC Paris) Authors: Reza Alibakhshi, Haris Krijestorac, Shirish Srivastava	
1000-1050	Measuring the Value of Boosting Algorithms in Online Advertising: A Two-sided Randomized Ghost Ad Experiment (HEC Paris) Authors: Yufei Shen, Zhihua Zhu, Zheng Cai	
1100-1150	Fighting Goliath by Pretending to be David—Platform Governance as a Bottom-up Movement (ESSEC) Authors: Thomas Huber, Thomas Kude, Jan Lepoutre, Julien Malaurent	
1200-1330	Lunch	Scarman restaurant
1330-1420	AI development as knowledge integration (WBS) Authors: Jochem Hummel, Zhewei Zhang, Joe Nandhakumar	Scarman space 34
1430-1520	Understanding Decentralization of Decision-Making Power in Proof-of-Stake Blockchains: An Agent-Based Simulation Approach (ESSEC) Authors: Christoph Mueller-Bloch, Jonas Valbjørn Andersen, Jason Spasovski, Jungpil Hahn	
1530-1620	Do Secondary Markets Drive the Failure of P2P Lending Platforms? (WBS) Authors: Tianzi Bao, Yi Ding, Ram Gopal, and Haifeng Xu	
1630-1800	Editorial panel & reflection	
1800-1820	Campus walk	On-campus
1830-	Social dinner	Varsity

For each presentation: 30min at most for the presentation and the rest for discussion

Emotional Arcs and User Engagement with Rich Content on Social Media Platforms

Authors:
Reza Alibakhshi (IE Business School)
Haris Krijestorac (HEC Paris)
Shirish Srivastava (HEC Paris)

Abstract:
As online platforms containing short-form videos (e.g., Instagram, Snapchat, TikTok) gain traction, a challenge for content creators is converting passive consumption of these media (views), which is plentiful, into active engagement (likes), which is comparatively rare. Prior studies have demonstrated that narrative arcs, whether in the context of movies or sports, are key to stimulating true engagement when these media are consumed. Building on this, our study explores how designing appropriate "emotional arcs" (i.e., expressions of various emotions over time) may help convert views of Instagram videos into likes. Using a dataset of 765 videos from 80 corporate Instagram accounts, we employ machine learning techniques to extract levels of expression of five key emotions over time within these videos. Using a combination of machine learning approaches, we demonstrate that emotional arcs have significant predictive power over the engagement rate in Instagram videos, and are thus meaningful in stimulating engagement in the context of short-form videos. Building on this, we unpack the black box to explore which emotional arcs are effective and ineffective, and support these findings through causal analysis. Moreover, we label and describe these arcs with examples to provide prescriptive insights for content creators. We discuss the implications of these findings for platforms, content creators, and marketers alike.

Measuring the Value of Boosting Algorithms in Online Advertising: A Two-sided Randomized Ghost Ad Experiment

Authors:
Yufei Shen (HEC Paris)
Zhihua Zhu (Tencent)
Zheng Cai (Tencent)

Abstract:
We propose a novel two-sided randomized ghost ad (TSR-GA) experimental methodology to measure the value of boosting algorithms in online advertising. Boosting algorithms are extensively deployed by leading ad publishers to increase the exposure opportunities of certain ad campaigns, with the goal of maximizing overall ad revenue. However, it is challenging to causally measure the value of a boosting algorithm added to the platform and detect a significant effect. Our method is compatible with the two-sided randomization (TSR) design that allows us to prevent various sources of interference, thus reducing the bias of estimates. It also incorporates the ghost ad design that allows us to identify and keep a very small fraction of observations relevant to statistical inferences, thus greatly improving the precision of estimates. To validate our method, we partnered with Tencent and conducted a large-scale experiment involving 594 million ad impressions to evaluate the revenue uplift of a boosting algorithm. We find that the estimated effect of the algorithmic intervention would be insignificant if using TSR alone without ghost ads. By contrast, using our TSR-GA approach, we find that the algorithm significantly uplifts the total Gross Merchandise Value (GMV) by 0.145%, and more importantly, the standard error of the estimate decreased by 78%. Our work can help ad publishers better identify profitable algorithms, avoid Type II errors, and generate millions of dollars of ad revenue. This method contributes to the literature by figuring out how to conduct large-scale field experiments in two-sided online marketplaces where participants on one side of the marketplace fiercely compete with each other.

Fighting Goliath by Pretending to be David
—Platform Governance as a Bottom-up Movement

Authors:
Thomas Huber (ESSEC Business School)
Thomas Kude (ESSEC Business School)
Jan Lepoutre (ESSEC Business School)
Julien Malaurent (ESSEC Business School)

Abstract:
In recent years, a few platform owners have become so large and powerful that they dominate their ecosystems of complementors. By governing in a top-down fashion, they set, oversee, and enforce platform rules, seemingly reducing complementors to powerless atomistic rule takers. This study aims to improve our current understanding of platform governance by exploring how complementors can change the rules of the game by forming a movement. To achieve this goal, we historically reconstruct how the activities of various complementors from Apple's iOS ecosystem carried out between 2009 and 2021 contributed to the creation and expansion of a movement against Apple. Our findings unpack how a movement emerges from the intimately intertwined micro- level activities of two types of complementors: platform activists and movement followers. Platform activists lead and animate the movement by spearheading protest with professional campaigns and by producing opportunities for other 3rd parties to join the fight. However, to be effective in forcing change, platform activists need the reciprocal support of movement followers to legitimize their demands. We synthesized these insights in our model of platform governance as a bottom-up movement, which has important theoretical implications for research on platforms and movements and allows us to outline new approaches to regulation.

AI Development as Knowledge Integration

Authors:
Jochem Hummel (Warwick Business School)
Zhewei Zhang (Warwick Business School)
Joe Nandhakumar (Warwick Business School)

Abstract:
This presentation focuses on the development of machine learning AI technology. Past research found AI and humans perform best together, especially when the machine learning knowledge of the AI and the context-based knowledge of the human are complementary. However, many studies showed the inability to realize complementarity because AI and humans 'think' differently. We examine the puzzle how organizations deal with the fact that the high value of AI-human collaboration on complex, expert tasks is nullified by the inability of the AI and human to communicate and engage in dialogue. We report findings of a 22-month case study on the development of machine learning AI technology for litigation.

Understanding Decentralization of Decision-Making Power in Proof-of-Stake Blockchains: An Agent-Based Simulation Approach

Authors:
Christoph Mueller-Bloch (ESSEC Business School)
Jonas Valbjørn Andersen (IT University of Copenhagen)
Jason Spasovski (ZTLment)
Jungpil Hahn (National University of Singapore)

Abstract:
Blockchain systems allow for securely keeping shared records of transactions in a decentralized way. This is enabled by algorithms called consensus mechanisms. Proof-of-work is the most prominent consensus mechanism, but environmentally unsustainable. Here, we focus on proof-of-stake, its best-known alternative. Importantly, decentralized decision-making power is not an inherent feature of blockchain systems, but a technological possibility. Numerous security incidents illustrate that decentralized control cannot be taken for granted. We therefore study how key parameters affect the degree of decentralization in proof-of-stake blockchain systems. Based on a real-world implementation of a proof-of-stake blockchain system, we conduct agent-based simulations to study how a range of parameters impact decentralization. The results suggest that high numbers of initial potential validator nodes, large transactions, a high number of transactions, and a very high or very low positive validator network growth rate increase decentralization. We find weak support for an impact of changes in transaction fees and initial stake distributions. Our study highlights how blockchain challenges our understanding of decentralization in information systems research, and contributes to understanding the governance mechanisms that lead to decentralization in proof-of-stake blockchain systems as well as to designing proof-of-stake blockchain systems that are prone to decentralization and therefore more secure.

Do Secondary Markets Drive the Failure of P2P Lending Platforms?

Authors:
Tianzi Bao (Warwick Business School)
Yi Ding (Warwick Business School)
Ram Gopal (Warwick Business School)
Haifeng Xu (Shanghai Jiao Tong University)

Abstract:
Secondary loan markets have been regarded as an efficient hedging tool to improve the liquidity and efficiency of the traditional loan market. However, when many peer-to-peer (P2P) lending platforms borrow the idea of secondary markets, almost all of them failed. In this study, we investigate the impact of secondary markets in the context of P2P lending. We theoretically differentiate P2P lending from traditional lending by identifying the lack of a critical player of intermediary banks. Furthermore, we focus on both sides of loan demand and loan supply to obtain a holistic picture. By leveraging a large-scale dataset comprising two leading P2P lending platforms in China, we design a quasi-natural experiment and employ a difference-in-differences (DID) approach for analyses. Theoretically, this study fills the void of how secondary markets influence P2P lending. Practically, P2P lending platform operators can benefit from our study to smartly utilize the secondary market.