

AdKDD 2026

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Abstract

The digital advertising field has always presented challenging machine learning problems, from learning on highly imbalanced petabytes of data with millisecond reactivity times, to modeling complex user paths to purchase across devices, platforms, and real-world behaviors. The AdKDD workshop serves as the premier forum for researchers and practitioners in computational advertising. The 2026 edition is particularly timely due to the increasing application of Generative AI models in advertising, alongside the enforcement of privacy-preserving initiatives such as GDPR and CCPA. These proceedings gather cutting-edge research spanning deep, privacy-preserving user understanding, fairness in ad delivery, the effectiveness of hyper-personalization, and critical assessments of new business models focused on incrementality. By bringing together academic and industry luminaries, the workshop not only highlights advanced machine learning methodologies but also sparks vital conversations about the broader societal impact of online advertising.

CCS Concepts

• **Theory of computation** → **Computational advertising theory**; • **Information systems** → **Computational advertising**; **Electronic commerce**.

Keywords

Computational advertising, Ad targeting, User modeling

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1 Introduction

As of the second quarter of 2024, the worldwide internet user spent more than 6.5 hours daily [3] across all devices interacting with online content almost entirely sponsored by advertisements. At almost \$700B global market size in 2024 [4], and expected to

reach \$870B by 2027, digital advertising has already surpassed traditional ads in global spending and continues to grow [2]. Digital advertising and in particular computational advertising is perhaps the most visible and ubiquitous application of machine learning and one that interacts directly with consumers. When done right, ads connect us to opportunities to enrich our lives and creep us out when done badly. Recently at the forefront of political battles between governments, large multinational corporations, and consumers, digital advertising remains a dynamic industry and research area.

Looking at the published literature, while some might view computational advertising as a mature field, the reality is the opposite. The industry is undergoing rapid transformation, moving beyond simple rule-based and identity-based targeting. The shift to privacy-preserving techniques (such as differential privacy, federated learning, and zero-knowledge proofs) and the need for modeling in a post-cookie, inferred-identity world dominate current research. Furthermore, the exponential advancement and integration of Generative AI (GenAI) are fundamentally changing the creative and campaign optimization processes, leading to breakthroughs in automated ad creative generation, personalized interactive experiences, and the development of intelligent, pay-for-use shopping agents. The challenges of measurement, causality, and maximizing user experience in this new, fragmented ecosystem ensure that the research agenda for computational advertising is vast and urgent.

The AdKDD workshop series continues to generate immense interest, serving as a critical bridge between academia and industry. It provides a unique, high-quality forum for researchers and practitioners to exchange ideas, share practical insights, and define the state of the art in digital advertising. As the gap between theoretical machine learning and large-scale, real-world deployment narrows, a dedicated forum like AdKDD is indispensable. It accelerates the adoption of cutting-edge technologies, such as Generative AI and privacy-enhancing systems, while fostering necessary conversations around the societal impacts, fairness, and transparency of online advertising.

2 Workshop Topics

The workshop covers a diverse set of themes reflecting the key trends in digital advertising. A primary focus is the evolution of computational advertising, particularly the impact of Generative AI (GenAI) on ad creative generation, automated campaign optimization, and the rise of interactive, conversational, and



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agent-driven shopping experiences. As the industry adapts to a post-cookie, privacy-first world, there is a strong emphasis on large-scale and novel ad targeting. This includes the application of privacy-preserving techniques such as differential privacy, federated learning, and zero-knowledge proofs, alongside advancements in representation learning, graph neural networks, and foundation models for deep user understanding.

Furthermore, the workshop highlights methodologies in causal inference and measurement, seeking to advance incrementality testing, multi-touch attribution, and off-policy evaluation to overcome challenges like data sparsity and delayed feedback. Another critical area is auction theory and marketplace design, involving mechanism design in complex, multi-sided markets, real-time bidding strategies, and the integration of machine learning with traditional auction models. We also explore topics around fairness, transparency, and user experience, aiming to ensure unbiased ad delivery, mitigate algorithmic discrimination, and balance monetization with long-term user satisfaction. Finally, we provide a venue for practitioners to share insights on deployed systems and battle scars, discussing the practical challenges of building and maintaining large-scale, high-throughput, low-latency computational advertising systems in industry.

In addition to these core areas, AdKDD continually evolves to incorporate emerging paradigms that shape the future of digital advertising. One such area is the development of robust multi-modal understanding systems that analyze video, image, and text simultaneously to generate more engaging and contextually relevant ad creatives. We also see a growing interest in the application of reinforcement learning for dynamic budget allocation and bidding, allowing advertisers to optimize for long-term value rather than immediate, short-term metrics. Cross-device tracking and identity resolution in an era of strict privacy constraints pose significant challenges, prompting research into decentralized data clean rooms and cryptographic methods for secure computation. Furthermore, the rise of connected TV (CTV) and retail media networks introduces new surfaces and datasets for targeted advertising, requiring novel algorithms to bridge offline purchases with online ad exposures. By providing a comprehensive platform to discuss these multifaceted issues, the workshop ensures that attendees gain a holistic view of the ecosystem. We invite researchers to explore our extensive repository of past papers, invited talks, and accepted presentations at our workshop website to understand the depth and breadth of topics we cover [1].

3 Organizers

Abraham Bagherjeiran, NeuroHub. Abraham is the founder of NeuroHub, an AI-powered advocacy platform that empowers families of children with developmental disabilities to seamlessly navigate state and federal systems, automate complex reimbursements, and maximize their care budgets. He was previously at eBay, as Senior Director of Applied Research at eBay. His team drove search ranking, recommendations, and advertising for eBay Search businesses at the intersection of e-commerce and advertising. He received his PhD in Computer Science at the University of Houston, Texas. He has authored over 25 papers and patents in the field of computational advertising.

Nemanja Djuric, Aurora Innovation. Nemanja is a Principal Technical Lead Manager at Aurora Innovation, while before his current position he worked in the same role at Uber ATG. Previously he was a Research Scientist at Yahoo Labs working on computational advertising. Dr. Djuric published more than 50 peer-reviewed publications at the leading Machine Learning, Data Mining, Computer Vision, Robotics, and Web Science conferences and journals, in addition to 10 granted patents and 10+ pending patent applications. Nemanja received his PhD degree in Computer Science from Temple University in 2013. His work was featured in Market Watch, VentureBeat, IEEE Innovation at Work, and other news outlets worldwide.

Kuang-chih Lee, Walmart. Kuang-chih is a Senior Director of AdTech Data Science at Walmart. Prior to Walmart, he worked at Alibaba as the head of Marketplace Governance in two different organizations, Alimama.com and AliExpress.com. He managed all aspects of research and development for a real-time personalized e-commerce marketplace. He has 30+ research papers published in top conferences (CVPR, NIPS, AAAI, CIKM, and KDD) and journals (PAMI, and CVIU), as well as 20+ patents. Prior to joining Alibaba Inc, Kuang-chih was the principal scientist and research director at Yahoo Inc. Before that he held various research and development leadership positions at Turn Inc, Flashfoto, DigitalPersona, and like.com. Kuang-chih received a CS PhD degree in UIUC in 2005.

Vladan Radosavljevic, Spotify. Vladan is a Machine Learning Chapter Lead at Spotify. Vladan is leading a team that builds Generative AI models at Spotify. Previously, Vladan was a Head of Data Science at OLX Group where his team built solutions for two-sided marketplace platforms. Before OLX, he was a Senior Scientist at Uber ATG working on systems for autonomous driving. Prior to Uber, he was a Research Scientist at Yahoo Labs where he worked on computational advertising problems. Vladan received his PhD from Temple University in Philadelphia in 2011. His work was featured in Market Watch, VentureBeat, IEEE Innovation at Work, and other news outlets across the world.

Suju Rajan, Amazon. Suju is a Director of Applied Science for Sponsored Products at Amazon. Prior to Amazon, she was a Sr. Director at LinkedIn heading machine learning teams that built solutions for LinkedIn's Enterprise offerings. Prior to LinkedIn, she was a SVP at Criteo, where she headed the Criteo AI Labs to advance both state-of-the-art and business impact in the field of computational advertising. Before Criteo, she was the Director of Personalization Sciences at Yahoo Research where her team worked on personalized recommendations for several Yahoo products. She received her PhD from the University of Texas at Austin.

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