

Artificial Intelligence-Driven Personalization in OTT Streaming Services: Research Trends, Intellectual Structure, and Future Directions

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ABSTRACT

This study explores the intellectual structure, research trends, and emerging areas of Artificial Intelligence (AI)-driven personalization in Over-the-Top (OTT) streaming services through a bibliometric analysis. It focuses on tracing the development of scholarly research, identifying influential authors, journals, countries, and publications, and examining how key themes and concepts have evolved over time. Data were collected from the Scopus database using a systematic keyword search covering the period from 2011 to March 2026. Based on the specified inclusion and exclusion criteria, 61 open-access research articles published in English were selected for analysis. The study uses bibliometric methods such as publication and citation analysis, collaboration network analysis, keyword co-occurrence analysis, and thematic mapping to examine the development and structure of the research field. The results show a clear increase in research activity, particularly after 2020, with publication output reaching its highest level in 2024. Recommender systems, machine learning, collaborative filtering, and artificial intelligence emerged as the key research themes. India and Spain were the most productive countries, although the collaboration network suggests that international research collaboration remains relatively fragmented. The thematic analysis also points to a gradual shift from technically focused studies on algorithms toward consumer-oriented topics, including hyper-personalization, consumer behaviour, and predictive analytics. Overall, the study provides an overview of the development of AI-enabled personalization research in OTT services and highlights areas that offer scope for future interdisciplinary research.

Keywords: Artificial Intelligence; Personalization; OTT Streaming Services; Recommender Systems; Bibliometric Analysis

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INTRODUCTION

The evolution of networks and mobile devices has caused various modifications in the media field, especially in the viewing habits of TV. Previously, the content had been shared solely via broadcasting and cable television; however, with the development of the Internet, individuals can find more channels and types of content. In other terms, technologies have created a new era of content consumption (Chalaby, 2024). OTT stands for over-the-top which refers to the delivery of media entertainment

services through the internet. Generally, it is usually offered by already established broadcasters and producers along with the services rendered by them to the ordinary television viewer (Kokaram and Crinon, 2015). OTT enables users to avoid the traditional medium of broadcasting, namely television and move online through mobile services and other devices including laptops, tablets, and smart TVs (Chatterjee, 2020). The rise of the Internet as a source for video distribution is proving to be one of the most revolutionary changes in the industry.

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OTT is a new function that does not use traditional tools of content dissemination, such as cable networks, TV, or cinema, but rather deals with streaming any content related to entertainment (Chen et al., 2017) and all types of entertainment-oriented content, such as series, films, and reality shows. Aspects such as the availability of cheap Internet connections, accessibility of smart gadgets, development of technologies, and progress with networks have triggered the emergence of OTT platforms (Kwak et al., 2021; Lee et al., 2020). The concept of OTT services gained significance in 2010 when Netflix, which used to be a video rental company, became a digital-streaming business. With the advent of high-speed internet, consumers gained access to an internet platform with access to various types of premium content on multiple devices that are connected to the internet without using TV stations or telecommunication companies. Thus, this technological transformation had a huge impact on the audiovisual industry, with the internet reconfirming its position as a medium and not a mere supplement, while merging with and conflicting with television. (Johnson, 2019). This first wave of OTT was characterized by the emergence of non-traditional players in the digital space, production of original content, introduction of new forms of viewing, application of adaptive bitrate streaming technology, and devising of subscription-based and advertising-supported business models respectively (Noam, 2021). With TV now acquiring a fresh batch of innovations linked to the web which incorporate cloud technologies together with artificial intelligence and machine learning (AI/ML) as well as content delivery networks (CDNs) fundamentally changing the principles from traditional broadcasting into streaming (Boyle, 2019). In the past decade, the OTT industry has gained success and changed the way people consume audiovisual materials. In addition, the OTT streaming industry has experienced incredible growth over the past few years, radically shifting the consumption of audiovisual materials. Recent industry observations put the worldwide OTT industry scale at around USD 362–400 billion by 2025–2026, estimating its future growth exceeding USD 600 billion by 2031 (Mordor Intelligence, 2026). Although the Indian OTT industry has been developing at a high rate recently, consumers are experiencing a new quality of choices in terms of content consumption and the capacity to access many different content types through any device connected to the Internet. As of 2024, the Indian OTT market was estimated to reach USD 4.8 billion, and by 2026, it is planned to grow to USD 10 billion, with a CAGR projected at more than 20% (Khanna et al., 2025). Over-the-top (OTT) media has completely changed the way people participate in streaming videos in the modern entertainment sector. All OTT platform's function based on a data-driven approach. They utilise collected consumer data to gain useful insights into consumer behaviour. These data play an important role in making decisions based on analytical data, which can be used in the process ranging from content creation to marketing. Recommendation algorithms are crucial to the overall

experience of viewers, as they can suggest content that matches their needs. These algorithms not only capture the suspicion of viewers but also help them find new content according to their desires (Behare and Jeet, 2024). Artificial Intelligence (AI) is becoming common in many industries, including education, marketing, and streaming. In education, AI is used to create personalised digital platforms for learning, which help make education more effective and efficient. In marketing and streaming, the use of AI makes it possible for brands and platforms to tailor content according to consumers' needs and improve their engagement. The interconnectedness of countries has led to a significant number of operations under globalisation. Over-the-top (OTT) content has prospered on a global level in recent years by expanding its meaning from 'video-on-demand' to incorporating various meanings in all manners (Mulla, 2022; Sharma & Lulandala, 2023). OTT services are a new type of self-sufficient multimedia service where users are free to choose any content they want to consume (Puthiyakath & Goswami, 2021). These technologies may be new in development, but exhibit considerable promise for content promotion and the creation of new marketing systems for media planners and marketing experts, as in the case of geo-targeting, which helps companies customise ads on a local level and incorporate location-based messages, sales, and promotions (Lian et al., 2019). OTT content has become increasingly popular and is supported by technology (Kraus et al., 2022). This research is based on three connected research aims that make a combined effort to refine the understanding of the intellectual domain of AI-based personalization on OTT platforms. The first aim is to review the history of publications in this field from 2011 to 2026, with a special focus on identifying the most prominent authors, papers, journals, and countries that have influenced the development of the discipline. The second aim is to study the intellectual structure of the field with the help of mapping the cooperation network and the co-occurrence of keywords to determine the main thematic clusters connecting Artificial Intelligence and the technology of personalization to the study of OTT streaming. The third aim is to determine the conceptual structure of the field by classifying research themes into motor, basic, niche, or emerging and declining, with the help of thematic and trend analysis. This set of objectives provides a framework for reading different scholarly contributions and determining real perspectives on the topic.

2. RESEARCH METHODOLOGY

The authors used a bibliometric approach to investigate existing information related to personalization by artificial intelligence in connection with OTT streaming services. The bibliometric approach is understood as a technique that analysis relationships between papers in the scope of a subject area that includes co-citation analysis, bibliographic coupling, and keyword co-occurrence. It helps to identify several indicators, such as the most important authors, leading journals, and most productive countries or institutions, as well as trends in publication

over the years (Chen, 2017; Smyrnova-Trybulska et al., 2018; Zhou et al., 2013; Singh & Bashar, 2021, Singh et al., 2026). The Scopus database was explored to identify and evaluate relevant scholarly publications on artificial intelligence-driven personalization in OTT streaming services. Scopus was selected because of its extensive coverage of peer-reviewed academic literature in the fields of information systems, artificial intelligence, media and entertainment, marketing, consumer behaviour, and digital technologies. A systematic keyword search was conducted using a combination of Boolean operators (AND and OR) to retrieve the most relevant publications from the databases. The search was performed within the Title, Abstract, and Author Keywords fields using terms associated with artificial intelligence, personalisation, and OTT streaming services. The search strategy included combinations of keywords such as (("artificial intelligence" OR AI OR "machine learning") AND (personalization OR personalisation OR "content personalization" OR "recommendation system" OR recommender OR "content recommendation")) AND (OTT OR "over-the-top" OR "streaming service*" OR "streaming platform*" OR "video streaming" OR "video-on-demand" OR Netflix OR Disney+ OR "Amazon Prime"))

3. INCLUSION AND EXCLUSION CRITERIA

Initially, there were 458 articles from the research using the keywords specified above. The authors undertook another round of investigation, specifying the most relevant articles.

3.1 Inclusion Criteria

A clearly outlined set of inclusion criteria guided the selection of articles for this study to ensure the relevance and methodological consistency of the dataset used. Only

peer-reviewed articles published within the years of 2011 to March 2026 were considered as this time marks the moment of the advent of AI-driven personalisation in the field of OTT Streaming Services within the sphere of academic research. All selected articles were written in English to guarantee proper understanding and evaluation of the dataset and articles sought for different levels of understanding. In addition, all articles containing a clear indication of Artificial Intelligence in general and Artificial Intelligence-driven Personalisation, OTT Streaming Services, OTT Research Trends were chosen to keep the thematic cohesion and maintain relevance to the subject under discussion.

3.2 Exclusion Criteria

To ensure that the analysis is dependable and repeatable, an appropriate set of exclusion criteria was developed. Language is the first criterion; it was decided to exclude every article published in a language other than English to reduce the chances of misleading translation and erroneous interpretation of the article. The second criterion included article types; the team refused to consider items belonging to non-article categories including book chapters, conference papers, non-scientific publications, newspaper articles, letters, and others since these types of publications do not always satisfy the peer-review criteria for academic publications. The exclusion of articles not included in the Scopus database is the third exclusion criterion. That is because the presence of a publication in the Scopus has always been considered evidence of its quality and influence since it means that the article passed through the peer-review procedure. Lastly, duplicates found in the search results were removed to avoid duplications.

PRISMA FRAMEWORK



Figure1: Data retrieval process through PRISMA framework

Source: Author's Compilation

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Table 1. 1 Main Information About Data

Description	Results	Description	Results
MAIN INFORMATION ABOUT DATA		DOCUMENT CONTENTS	
Timespan	2011:2026	Keywords Plus (ID)	361
Sources (Journals, Books, etc)	48	Author's Keywords (DE)	256
Documents	61	AUTHORS	
Annual Growth Rate %	12.69	Authors	221
Document Average Age	3.31	Authors of single-authored docs	6
Average citations per doc	20.59	AUTHORS COLLABORATION	
References	7612	Single-authored docs	6
		Co-Authors per Doc	3.64
		International co-authorships %	39.34
		DOCUMENT TYPES	
		Article	61

According to **Table 1**, the year range between 2011 and 2026 has been covered by 61 documents obtained from 48 different types of sources, including books, journals, and other scientific publications. The dataset shows an increasing trend in the field of research, with an improvement in the number of publications each year at a 12.69 percent rate. The average age of documents in the dataset is 3.51 years, while the average citations received by the publication are 20.59, accumulating to a total of 7612 references. According to the dataset, the total number

of Keywords Plus (ID) is 361, whereas the Author's Keywords (DE) are 256. To obtain the selected publications, the contribution from 221 authors is presented in the table, of which only six authors submitted single-authored documents. Overall, the dataset contains six single-authored documents with an average of 3.64 co-authors for each publication. Moreover, the dataset has a percentage of 39.34 percent involving international co-authorship which means that there prevails good research collaboration among different countries.

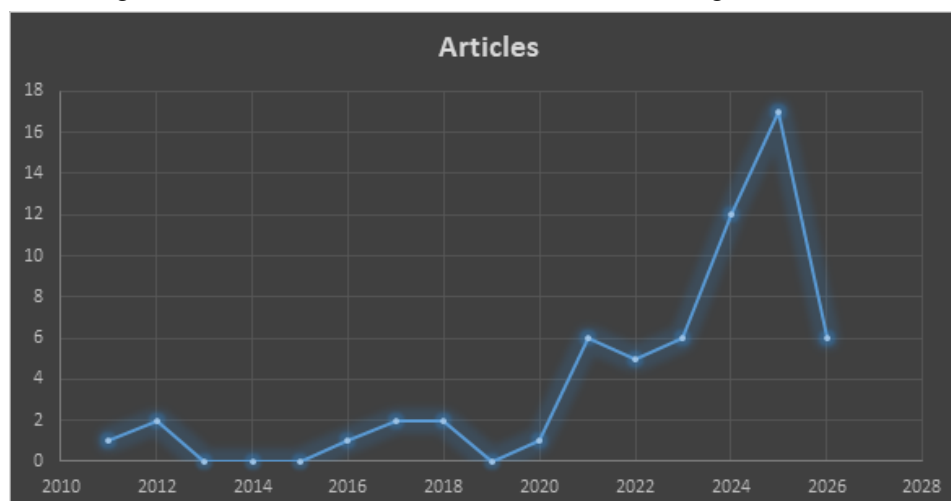
**Figure 2** Annual Scientific Production

Figure 2 displays information on publication trends in the given research area. There was a low level of research activity within the analysed timeframe. For instance, the first paper was published in 2011 and the next one in 2012, while no articles were published from 2013 to 2016. A slight rise in scientific activities occurred in 2017 and 2018 when two works were published each year, and subsequently, it dropped back to zero in 2019. A considerable increase in research output started in 2020 with six publications that year, with a small decrease to five in 2021, and in the following year, there was again an increase to six publications, indicating the increasing

popularity of the research field. The highest increase was observed in 2023 and 2024, when the number of publications reached approximately 12 and 17 articles, respectively. This sharp growth indicates a rapid increase in academic interest in this research area. However, in 2025, the number of published works decreased significantly to approximately six articles. Overall, the trend shows that research in this area has gained speed over the last few years, especially after 2020, reaching its peak in 2024. The decline that follows might be due to the incomplete indexing of relatively fresh publications.

Table 2: Most Cited Publications

Sr	Authors	Title	TC	Journal	Publisher	DOI
1	Robin Burke; Alexander Felfernig; Mehmet H. Göker	Recommender Systems: An Overview	195	AI Magazine	Association for the Advancement of Artificial Intelligence (AAAI)	10.1609/aimag.v32i3.2361
2	Harald Steck; Linas Baltrunas; Ehsan Elahi; Dawen Liang; Yvan Raimond; Joe Basilico	Deep Learning for Recommender Systems: A Netflix Case Study	146	AI Magazine	Association for the Advancement of Artificial Intelligence (AAAI)	10.1609/aimag.v42i3.18140
3	X. Guan; C. T. Li; Y. Guan	<i>Matrix Factorization with Rating Completion: An Enhanced SVD Model for Collaborative Filtering Recommender Systems</i>	94	<i>IEEE Access</i>	Institute of Electrical and Electronics Engineers (IEEE)	10.1109/ACCESS.2017.2772226
4	M. J. Awan; R. A. Khan; H. Nobanee; A. Yasin; S. M. Anwar; U. Naseem; V. P. Singh	A Recommendation Engine for Predicting Movie Ratings Using a Big Data Approach	83	Electronics	MDPI	10.3390/electronics10101215
5	Adam Feuerwerker; Y. He; S. Khatri	Statistical Significance of the Netflix Challenge	74	Statistical Science	Institute of Mathematical Statistics (IMS)	10.1214/11-STS368

6	D. Afchar; A. Melchiorre; M. Schedl; R. Hennequin; E. Epure; M. Moussallam	Explainability in Music Recommender Systems	74	<i>AI Magazine</i>	Association for the Advancement of Artificial Intelligence (AAAI)	10.1002/aaai.12056
7	L. Zhao; S. J. Pan; Q. Yang	A Unified Framework of Active Transfer Learning for Cross-System Recommendation	73	Artificial Intelligence	Elsevier	10.1016/j.artint.2016.12.004
8	K. M. Hasib; A. Tanzim; J. Shin; K. O. Faruk; J. Al Mahmud; M. F. Mridha	BMNet-5: A Novel Approach of Neural Network to Classify the Genre of Bengali Music Based on Audio Features	67	IEEE Access	Institute of Electrical and Electronics Engineers (IEEE)	10.1109/ACCESS.2022.3213818
9	F. Wu; C. Lyu; Y. Liu	A Personalized Recommendation System for Multi-Modal Transportation Systems	48	Multimodal Transportation	Elsevier	10.1016/j.multra.2022.100016
10	M. O. Ayemowa; R. Ibrahim; M. M. Khan	Analysis of Recommender System Using Generative Artificial Intelligence: A Systematic Literature Review	47	<i>IEEE Access</i>	Institute of Electrical and Electronics Engineers (IEEE)	10.1109/ACCESS.2024.3416962

Table 2 presents the 10 most-cited publications in recommender-system research. Burke et al. (2011) received the highest number of citations (195), followed by Steck et al. (2021) with 146. Guan et al. (2017) and Awan et al. (2021) received 94 and 83 citations, respectively. Feuerverger et al. (2012) and Afchar et al. (2022) received 74 citations, whereas Zhao et al. (2017), Hasib et al. (2022), Wu et al. (2022), and Ayemowa et al. (2024) received 73, 67, 48, and 47 citations, respectively. Overall, the highly cited studies reflect the evolution of recommender system research from collaborative filtering and matrix factorisation to deep learning, transfer learning,

explainable AI, multimodal recommendation, and generative AI.

Table 3. Top 10 Most Cited Journals

Sources	Articles	SJR	H-index
IEEE ACCESS	8	Q1	338
AI MAGAZINE	3	Q2	93
ELECTRONICS (SWITZERLAND)	3	Q2	137
MULTIMEDIA TOOLS AND APPLICATIONS	2	Q1	134
PAKISTAN JOURNAL OF COMMERCE AND SOCIAL SCIENCES	2	Q3	27
ACM TRANSACTIONS ON INTELLIGENT SYSTEMS AND TECHNOLOGY	1	Q1	92
APPLIED ECONOMICS LETTERS	1	Q3	72
APPLIED INTELLIGENCE	1	Q2	119
APTISI TRANSACTIONS ON TECHNOPRENEURSHIP	1	Q3	27
ARCHIVES OF DESIGN RESEARCH	1	Q1	13

Table 3 provides a breakdown of the major journals that have contributed to recommender system research. IEEE Access has been noted to be the top in the journal list with 8 published articles, a Q1 SJR ranking, and an H-index of 338, meaning it has a good scholarly influence. Moreover, the journals AI Magazine and Electronics (Switzerland)

published three articles each and were placed in the Q2 category. The journal Multimedia Tools and Applications has been in the 1st place on the journal list with only two articles published, as it has a Q1 ranking and H-index of 134. Other journals published one or two articles, with a combination of Q1, Q2, and Q3 standings.

Table 4. Top 10 Author's Contribution

Authors	Articles	Total Citations	Average Citation/Articles
Schedl, Markus	2	74	37
Adamos, D.A.	1	11	11
Afchar, Darius	1	74	74
Afilipoaie, Adelaida	1	13	13
Agrawal, Rohan	1	13	13
Akhadam, Ayoub	1	6	6
Al Zumot, Rania	1	0	0
Alrifae, Abdallah Ali Mohammad	1	0	0
Anguraj, Dinesh Kumar	1	0	0
Anwar, Syed Muhammad	1	83	83

The leading authors in terms of the volume of publications and citation rates are listed in Table 4. The most prolific author here is Schedl, Markus, who produced two publications and gained 74 citations in total with 37 citations average. Concerning citation impact, the highest rate belongs to Anwar, Syed Muhammad whose works were cited 83 times on average, whereas Afchar, Darius

traces behind with 74 citations each. Moreover, other authors produced only one paper each, and the volume of citations ranged between 0 and 13 in their case. Thus, we can conclude that there are noticeable differences in research output and scholarly impact among authors in the recommender systems field.

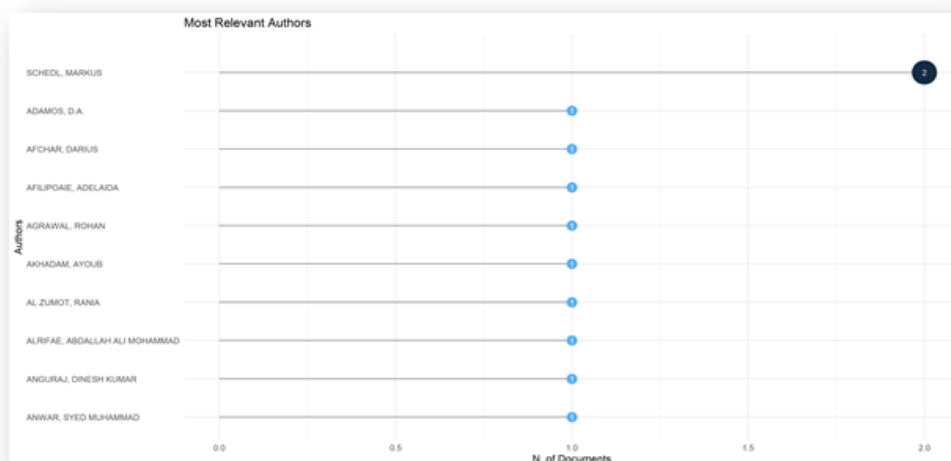


Figure 3. Most Relevant Authors

Figure 3 indicates that Schedl, Markus is the most productive author in the dataset, with two publications. The remaining authors, including Adamos, D.A.; Afchar, Darius; Afilipoaie, Adelaide; Agrawal, Rohan; Akhadam, Ayoub; Al Zumot, Rania; Alrifae, Abdallah Ali

Mohammad; Anguraj, Dinesh Kumar; and Anwar, Syed Muhammad—have contributed one publication each. Overall, the distribution suggests that authorship is relatively dispersed, with no single author demonstrating a dominant level of productivity apart from Schedl.

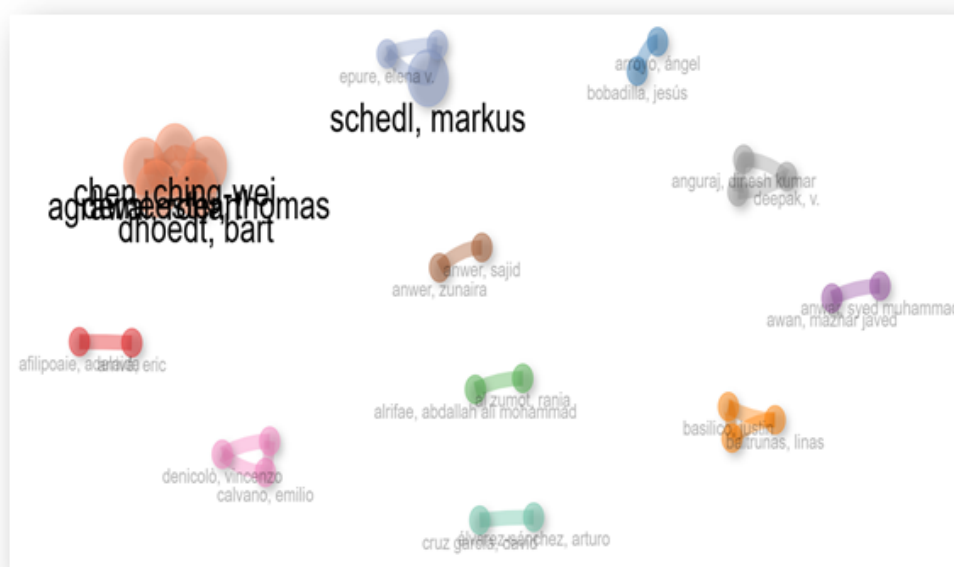


Figure4. Author's Collaboration Network

Figure 4 illustrates that the research field is characterised by multiple small and relatively independent collaborative clusters. Schedl, Markus appears as a prominent author within the network, while several other authors form smaller collaborative groups. The presence of numerous disconnected or weakly connected clusters indicates

limited cross-group collaboration and suggests that research in the field is being conducted by diverse research teams. Overall, the network reflects a fragmented yet emerging scholarly structure with opportunities for greater collaboration and knowledge exchange among researchers.

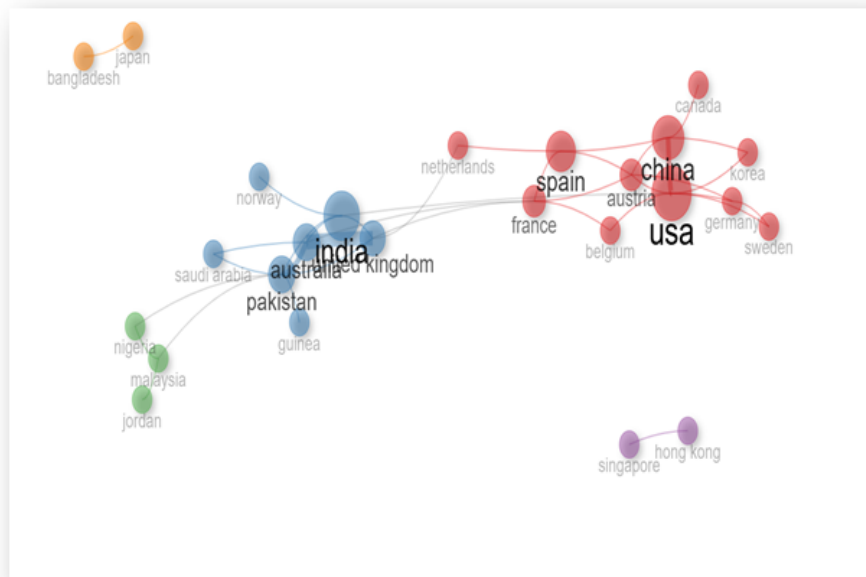


Figure 5. Countries Collaboration

As shown in **Figure 5**, the graph illustrates the international collaboration landscape within a specific research domain, typically representing a country co-authorship analysis. In this bibliometric context, the individual nodes represent countries based on author affiliations, and their respective sizes reflect total research productivity or publication volume within the dataset. Consequently, China and the USA emerge as the dominant global knowledge hubs, displaying the largest nodes, while India, Spain, and the United Kingdom serve as highly productive secondary contributors. The network is further organized into distinct, color-coded collaborative clusters, which group countries that possess high frequencies of joint publications. The largest of these is the red cluster, a Sino-American and European network anchored by the massive USA-China collaborative linkage and integrating output from nations like France, Germany, and Canada.

Conversely, the blue cluster represents a collaborative network anchored heavily by India, which acts as a central hub bridging the UK, Australia, Pakistan, and others. A smaller green community links regional research partners like Nigeria, Malaysia, and Jordan, connecting to the broader global network primarily through a link between Nigeria and Saudi Arabia. Additionally, the visualization identifies isolated collaborative dyads—specifically Japan and Bangladesh (orange) alongside Singapore and Hong Kong (purple)—which co-author internally but lack sufficient joint publications to form visible edges with the main network. Finally, the thin grey edges spanning between the primary red and blue clusters represent critical cross-community bridges, highlighting international research partnerships that facilitate knowledge transfer across major academic spheres.

Table5. Most Productive Countries

Country	Developing/Developed	Articles	Articles %	SCP	MCP	MCP %
INDIA	Developing	6	9.8	5	1	16.7
SPAIN	Developed	6	9.8	4	2	33.3
USA	Developed	4	6.6	2	2	50
CHINA	Developing	3	4.9	3	0	0
FRANCE	Developed	3	4.9	0	3	100
KOREA	Developed	3	4.9	3	0	0
GREECE	Developed	2	3.3	2	0	0
INDONESIA	Developing	2	3.3	2	0	0
ITALY	Developed	2	3.3	2	0	0
MOROCCO	Developing	2	3.3	2	0	0

Table 5 shows the overview of the research output from different countries on AI-based personalization in OTT streaming services. India and Spain produced six articles each (9.8%), showing considerable research in this

emerging sector. Of the six publications from India, five were from the USA (SCP), while one was under the Multiple Country collaboration (MCP) category; hence, the MCP percentage was 16.7%. Spain also wrote six

In **Figure 6**, the size of the font of the words is proportional to the frequency at which the words were used, revealing the key “intellectual pillars” of the field. The main issues are strongly expressed in the most widely used words: “recommender systems,” “machine learning,” “collaborative filtering,” and “artificial intelligence.” These indicate that the field generally deals with recommendations and personalization through algorithms and data processing. Beneath these main words, the cloud presents the core methodologies and techniques that underlie recommendation systems, including a number of terms such as “deep learning,” “learning systems,” “matrix factorization,” “neural networks,” and particular branches

of knowledge, such as “explainable ai” and “adversarial machine learning.” In addition, the diagram shows real-life areas of application of the studied system. Also, the reader can see such terms as “streaming service,” “music streaming,” “motion pictures,” and “electronic commerce.” Other words concern topics that are more related to people than the issues mentioned above, such as “behavior,” “interaction,” “hyper personalization,” and “emotion recognition.” It means that the latest developments in this field combine the technologies developed with the knowledge about the needs of users, which helps eliminate their “information overload.”

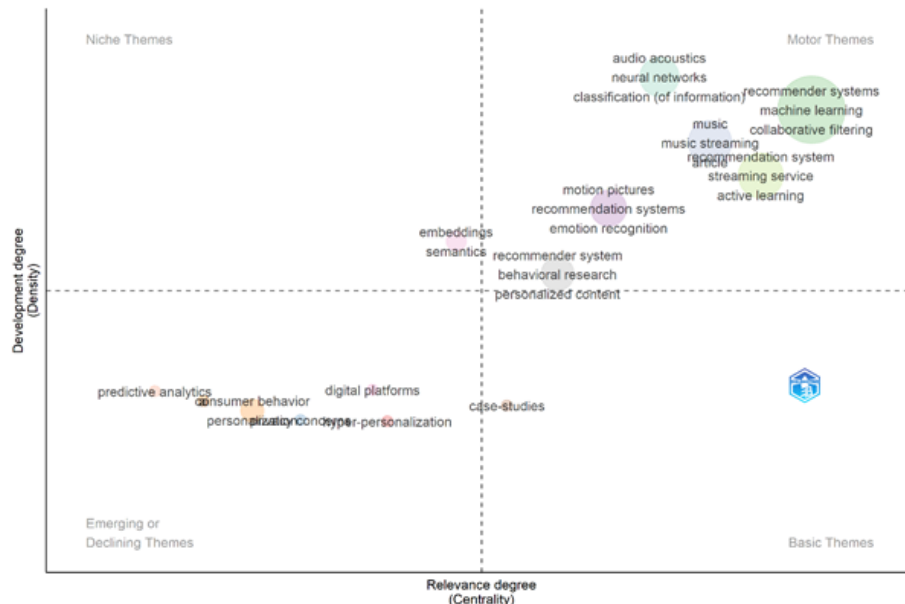


Figure 7. Thematic Map

Figure 7 shows the conceptual structure and development of research related to AI-driven personalization and streaming services based on two dimensions: relevance degree (centrality) on the horizontal axis and development degree (density) on the vertical axis. The map is divided into four quadrants: motor, niche, emerging or declining, and basic themes.

- The **Motor Themes** quadrant, located in the upper right section, contains well-developed and highly relevant research themes. The dominant cluster includes recommender systems, machine learning, collaborative filtering, recommendation systems, streaming services, music streaming, neural networks, and information classification. These themes demonstrate both strong internal development and high relevance to the overall research field, indicating that machine-learning-based recommendation and personalization technologies represent major and mature research areas.
- The **Niche Themes** quadrant in the upper-left contains themes with high internal development but comparatively lower centrality. In this map, embeddings and semantics are present in this area. These topics are relatively specialised and well-

developed but have weaker connections to the broader intellectual structure of the field.

- The **Emerging or Declining Themes** quadrant, located in the lower-left quadrant, includes predictive analytics, consumer behaviour, personalisation, personalised content, digital platforms, and hyper-personalisation. These themes have relatively low centrality and density, suggesting that they may represent emerging areas of research that are still developing or themes that have experienced declining attention. Personalisation, hyper-personalisation, and consumer behaviour indicate a growing interest in understanding how AI-enabled technologies can be used to tailor digital experiences to individual consumers.
- Finally, the **Basic Themes** quadrant in the lower right represents themes that are highly relevant to the field but comparatively less developed internally. Case studies and related personalisation-oriented topics appear to be close to this quadrant. Their position suggests that these themes provide an important foundation for the research domain but require further conceptual and empirical developments.

Overall, the thematic map indicates a shift from technically oriented recommendation system research toward more consumer-centric applications of AI personalisation. While machine learning, recommender systems, and collaborative filtering constitute a mature and central knowledge base, themes such as personalisation,

hyper-personalisation, consumer behaviour, and predictive analytics appear to offer important opportunities for future research. This pattern highlights the increasing integration of AI technologies into consumer behaviour and personalised digital experiences, particularly within e-commerce and digital platforms.

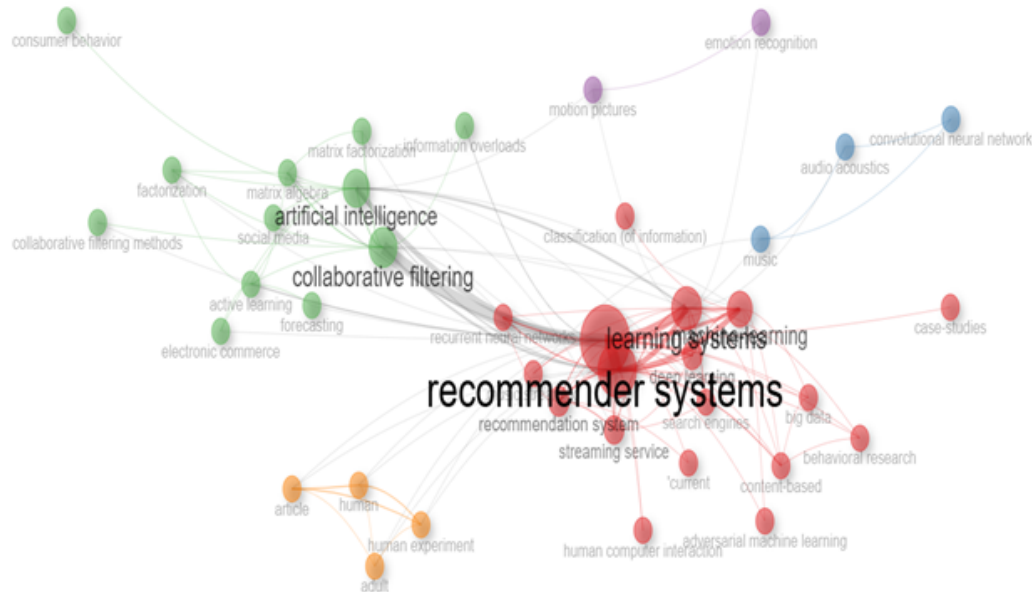


Figure 8. Co-occurrence keywords Network

The keyword co-occurrence network shows in **figure 8** illustrates the intellectual structure and major research themes in recommender systems and artificial intelligence. The network is constructed based on the frequency and co-occurrence of keywords, where the size of each node represents the prominence or frequency of a keyword and the connecting lines indicate relationships and co-occurrences between keywords. Different colours represent distinct thematic clusters in the research domain

- The **red cluster** represents the most noticeable and important stream of research, where the term “recommender systems” dominates the literature. It is also closely related to such terms as “learning systems,” “deep learning,” “recommendation systems,” “streaming services,” “search engines,” “big data,” “behavioral research,” “content-based recommendation system,” and “adversarial machine learning.” The position of “recommender systems” in the centre and its great size show that it is at the heart of the research landscape, where the close association with deep learning and learning systems is an indicator of the trend for the implementation of new AI technologies in the recommendations field.
- The **Green cluster** is mainly engaged in artificial intelligence and collaborative filtering. Some key concepts that can be mentioned are artificial intelligence, collaborative filtering, matrix algebra, matrix as a space concept, social media, active education, forecasting, electronic commerce, and consumer behaviour. The presence of consumer

behaviour and e-commerce around this cluster indicates a strong tie between AI-based recommendation technologies and consumer-oriented digital platforms. The collaboration between the theory of knowledge and AI research makes collaboration filtering an important bridge between the science of AI and recommendation systems.

- The **Blue cluster** represents a more specialised technological stream associated with audio and multimedia recommendation applications. Keywords such as audio acoustics, convolutional neural networks, and music are closely connected. This cluster suggests the application of machine learning and neural network techniques to music and audio-based recommendation systems.
- The **Purple cluster** includes emotion recognition and motion pictures, highlighting research on intelligent systems that incorporate emotional or multimedia information. The relationship between emotion recognition, motion pictures, and recommendation systems indicates growing interest in developing more context-aware and user-sensitive recommendation technologies.
- The **Orange cluster** is comparatively smaller and focuses on human-oriented and experimental research, including keywords such as human experiment, human, adult, and article. This cluster suggests that some studies examine recommender systems and AI

technologies through human experimentation and user-related research.

Overall, the network demonstrates that recommender systems constitute the central research theme, with strong connections to artificial intelligence, collaborative filtering, machine learning, deep learning, and big data. The network also reveals an expansion of the field toward consumer behavior, electronic commerce, streaming services, music, emotion recognition, and human-computer interaction. The strong interconnections among these clusters indicate that contemporary recommender-system research is becoming increasingly interdisciplinary, combining technical AI developments with consumer-centric and application-oriented research.

4. DISCUSSION

4.1 Publication Growth and Disciplinary Trajectory

Between 2011 and 2026, the annual development of personalization based on AI technology in OTT streaming platforms appears to be at 12.69%. The period from 2011 to 2019 has been characterized by a low publication rate. Starting from 2020, the academic interest in the theme has dramatically increased due to the global boost in digital streaming. The peak occurred in 2024, with 17 publications. However, the development of a range of fields should be analyzed throughout this period. Initially, authors relied much on computer science with emphasis on back-end computation possibilities and excellence of algorithms. Being nowadays interdisciplinary, this area has branched out to people's journals and has started to concentrate on consumer issues such as hyper-personalization or consumer engagement.

4.2 Geographic and Institutional Contributions

AI-powered personalization in OTT platforms is pursued by 24 nations worldwide, highlighting significant contributions from both developed and developing economies. India and Spain lead world productivity by contributing six articles each, followed by the USA. The collaborative landscape shows the differences in the countries' strategies, such as France and the USA, which have high levels of international co-authorship, whereas key contributors like India, China, and South Korea mainly depend on domestic research networks. On a structural level, global collaborations take the form of two main and disconnected hubs—one created by the USA, China, and European countries, and the other established by India, the UK, and Australia.

4.3 Thematic Structure and Conceptual Evolution

The dynamic framework and development of the discipline reflect a shift from the stage of technical algorithmizing to one that is primarily focused on end users. The mature theme “power” up technologies of the area, where machine learning, recommender systems, and collaborative filtering make up a strong technological basis of the field. In addition, the emergence of new themes such as hyper-personalisation, consumer behaviour, and predictive analytics indicates a new direction for behaviour studies. Moreover, the network

analysis of keywords proves that the intersection of computer science with behavioural science, emotion recognition, and e-commerce has made the process of creating user-friendly and personalised online experiences possible.

4.4 Collaborative Networks and Knowledge Diffusion

The collaborative structure of this academic field is characterised by a partially formed structure of research that is full of scientific teams that are specialised in different studies but do not have anything in common. Such evidence demonstrates that collaborative work is taking place, which can be shown in an average of 3.64 collaborators per publication and a high level of international collaboration, equal to 39.34%. Simultaneously, the general structure of the collaborative field consists of numerous independent small groups that function separately from each other. Even if certain experts, such as Markus Schedl, form local centres of scientific activity, the absence of established links between groups leads to limited possibilities for knowledge transfer. Consequently, the problem of locality is prevalent in this study and allows for effective future collaboration.

5. CONCLUSION, IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH DIRECTIONS

The current bibliometric study sheds light on the intellectual scope, transformational trends, and collaborative relationships in the field of AI-enabled personalization in OTT services from 2011–2026. The analysis reveals that this fast-evolving area has experienced considerable growth in terms of scientific publications since 2020, which corresponds to the emergence of digital streaming technology worldwide. The geography of the research indicates high variety and equality, as the contributors represent different countries in both developed and developing economies. In this respect, India and Spain appear to provide the highest number of publications, while the USA and France are recognised to have stronger cooperative links. Nevertheless, the existing collaboration network is highly fragmented and comprises isolated clusters. This suggests that it is necessary to have an exchange of knowledge among different countries and organisations to improve the discipline. The study indicates a significant transition in perceptions of the role of AI in OTT platforms. Although technology continues to be characterised by certain methods of computation, research is gradually changing direction towards the socio-technical and business applications of AI. New concepts such as hyper-personalisation, consumer behaviour, and predictive analytics suggest that recommendation algorithms have been recognised as something much more than a simple computational system; they have transformed into powerful tools for strategic planning. In general, the literature reviewed suggests that the future of the entertainment industry in its digital form is closely connected to using the latest artificial intelligence technologies in combination with approaches that focus on the user.

5.1 Implications

The results of this bibliometric study yield important theoretical and managerial implications. From a theoretical standpoint, this research demonstrates the critical intellectual transformation that AI-based personalization has undergone, moving away from being merely a computational sphere focused on algorithms to becoming a multidisciplinary domain that revolves around consumer behaviour and digital platforms. In addition, the concept of dependence of leading producing countries on national collaboration networks indicates the theoretical fragmentation in the field and highlights the need to develop unified and cross-cultural models need to be developed, which would combine international views on recommendation systems. The emergence of concepts such as hyper-personalisation, predictive analytics, and emotion recognition has also led to clear guidelines that can be followed by future researchers studying the socio-technical aspects of AI and digital entertainment. In terms of managerial implications, this study provides evidence that recommendation algorithms should be viewed as key strategic marketing assets that play a major role in keeping the audience engaged and reducing the number of unsubscribed customers. Thus, OTT managers must embrace the implementation of dynamic behavioural AI technologies that adapt to real-time contextual viewing patterns. In conclusion, the results from emerging economies provide sufficient evidence that streaming companies must ensure that their personalization methodologies are culturally and behaviourally adjusted in line with local consumption trends.

5.2 Limitations, and Future Research Directions

Despite the significant contributions this study has made to understanding the intellectual framework of artificial intelligence in streaming services, its limitations do provide clear points for further studies. In terms of methodology, it should be noted that data retrieval was restricted to the Scopus database and involved only English-language open-access journal articles, which resulted in only 61 documents in the final sample size. It is possible that the net results of the materials included until 2026 stem from delays in updating recent publications. Future studies should not only continue applying systematic reviews or meta-analytical methodology to obtain an overview of the literature but also try to leave the confines of algorithmic modelling and examine the influence of hyper-personalisation, predictive analytics, and emotion recognition technology on subscription retention, the perception of privacy risks, and long-term engagement. The rapid introduction of generative AI technologies into video streaming services necessitates the ethical governance of algorithms and the tackling of issues such as algorithmic bias and filter bubbles. Moreover, future studies should include collaboration in conducting international studies aimed at examining the impact of culture on the personalised consumption of information.

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