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Legal Risk Determination of "AI Face Swapping"

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Abstract

With the rapid development of artificial intelligence technology, AI face-swapping technology has been widely applied in fields such as film, television, and advertising. However, it has also triggered numerous legal risks. Therefore, by analyzing relevant legal provisions and typical cases, clarifying the criteria for determining copyright and portrait right infringements in AI face-swapping activities, as well as the principles for allocating liability among multiple subjects, effective legal guidance can be provided for the compliant application of AI face-swapping technology and for rights holders to protect their rights. At the copyright level, the determination of the "access" element should adopt a relaxed standard, and AI face swapping should be assessed for substantial similarity through a combination of the "overall impression method" and the "abstraction-filtration-comparison method." At the portrait right level, as long as the public can associate the synthetic content with a specific natural person, it constitutes "identifiability" and is suspected of infringing personal information, regardless of whether there is profit motive. In practice, the infringer must simultaneously bear joint liability for both copyright and portrait right infringements; if a platform fails to promptly fulfill its "reasonable care" obligation by taking necessary measures such as deletion or blocking, it shall bear joint and several liability; and if the provider of AI face-swapping technology fails to establish necessary mechanisms to fulfill its reasonable control obligations, it shall bear presumed fault liability.

Keywords

AI face swapping, copyright, portrait right, fair use, liability allocation

1. Introduction

In the current era of rapid development of generative artificial intelligence technology and major internet platforms, AI face-swapping technology, with its disruptive ability to reconstruct image and video content, has been widely applied in diverse scenarios such as entertainment and social interaction. While bringing novel experiences to the public, it has also stirred up waves in the legal field. At the copyright level, the determination of "substantial similarity" between AI face-swapped works and original works has fallen into difficulty. Whether merely replacing the face—the core visual element—constitutes infringement, and whether the traditional "overall impression method" remains applicable in the context of new technologies, have triggered extensive discussion. In the field of portrait rights, the criteria for determining "identifiability" continue to expand, extending from static facial features to comprehensive elements such as dynamic

expressions, voice, and body movements. How to precisely delineate the boundaries of infringement has become a challenging issue. Furthermore, when two rights are infringed by the same act, how to choose the applicable law and how to determine the method of liability allocation have gradually become difficult points in judicial adjudication. Based on this, this paper deeply analyzes the legal risks of AI face swapping and the principles of liability allocation among multiple subjects. It not only responds to the urgent needs of judicial practice but also provides a necessary premise for constructing a legal regulatory system that guides technology toward goodness.

2. Legal Risk Determination of AI Face Swapping

As a representative application in the field of deepfakes, AI face-swapping technology mainly involves two basic scenarios. The first scenario involves the existence of an original audiovisual work: it directly processes ready-made video clips or static images by replacing the faces therein with new target faces; or it removes the faces from the original work to create standardized templates that are open for users to upload their own faces. The core risk in this scenario is infringing the copyright of the original audiovisual work. The second scenario does not involve any original audiovisual work: the user first shoots a new photo or video themselves and then replaces the face with someone else's. The core risk here is infringing the portrait right and right of reputation of the person whose face is replaced (Zhang & Hou, 2024). To elaborate, the legal risks of AI face-swapping behavior exist in two dimensions: one is copyright infringement of the original audiovisual work, and the other is portrait right infringement of the face being used.

2.1 Determination of Copyright Infringement

AI face swapping refers to the synthesis of new media content by replacing the face in an original image or video with another person's face. Therefore, the content before replacement should be recognized as a work and protected by copyright (Lin & Lin, 2023). Since the entire AI face-swapping process is completed on an AI automatic generation platform, existing artificial intelligence systems automatically collect data and upload it to a database as accessible resources after generating new images or videos, allowing other users to obtain them at any time and place of their choosing. This is highly likely to infringe the original copyright owner's right of information network dissemination. In addition, in audiovisual works with original videos, users replacing faces without the permission of the original author may alter the character's traits, thereby potentially infringing the right of adaptation and the right to protect the integrity of the work. If the content of the work is distorted or tampered with, causing adverse consequences, it may also infringe the right to protect the integrity of the work and the "right to protect the performance image from distortion," among others (Zhang & Hou, 2024).

Copyright law does not focus on the process of reproduction but only on the result of the act. Therefore, generative artificial intelligence remains subject to the "access + substantial similarity" test for copyright infringement (Zhang & Wang, 2025). In AI face-swapping copyright infringement cases, difficulties arise in determining both the "access" element and substantial similarity.

2.1.1 Difficulties and Rules in Determining the "Access" Element

In AI face-swapping copyright infringement, the determination of the "access" element no longer manifests as the traditional direct viewing or acquisition of the work. Instead, it is concealed within "automatic data algorithm crawling," leading infringers to frequently defend themselves on the grounds of "no subjective intent to access" and making it difficult for rights holders to prove that the infringing party has "accessed" their work. This presents new complexities.

Given that generative artificial intelligence possesses extremely strong information acquisition capabilities and has basically eliminated information retrieval barriers, the possibility of independent creation is greatly reduced. The traditional "access" rule aims to find certain physical channels to prove the infringer's fault. However, in judging whether AI-generated content infringes copyright, it is clearly unrealistic to require the rights holder to prove one by one that the other party "actually downloaded or browsed" the work through physical means. It is more appropriate to adopt a relaxed standard of "possibility of access." That is, as long as the prior copyrighted work has been publicly published and placed in a network environment, and there is a possibility that it was used as training data for artificial intelligence,

"access" can be established (Shao, 2023; Wang, 2024). Current judicial practice has also gradually shown a trend toward relaxing the "access" standard. For example, in the case of Chen v. Shanghai Yi Network Technology Co., Ltd., the defendant's mini-program used 13 ancient-costume short videos posted by the plaintiff on Douyin as face-swapping templates, replacing only the characters' faces while keeping the scenes, actions, and compositions completely consistent. The court held that the plaintiff's videos had been publicly released on a social platform and were accessible, and the defendant failed to provide a legitimate source for the material. Combined with the substantial similarity between the two contents, it was sufficient to presume that the defendant had "accessed" the original works (Jiading District People's Court of Shanghai, 2024).

2.1.2 Difficulties and Methods in Determining Substantial Similarity

The determination of "substantial similarity" suffers from the problem of blurred boundaries. As a highly recognizable element in audiovisual works and the focus of audience attention, the face is altered in its core by AI face swapping. This gives infringers grounds to argue that "face replacement constitutes an original modification" and to test the legal boundaries. Most courts adopt the "overall impression method," holding that AI face-swapped videos are highly consistent with the original in overall impression and are sufficient to cause ordinary viewers to confuse or misidentify them, thus constituting substantial similarity at the level of expression. Nevertheless, this method takes the aesthetic intuition of ordinary observers as the criterion, overly relies on their subjective feelings, and lacks an objective and uniform measurement scale, appearing rather vague (Zhang & Wang, 2025). Different observers, due to differences in age, cultural background, and aesthetic preferences, often have vastly different perceptions of the same work. This uncertainty in subjective judgment objectively grants judges greater discretion in adjudication, which can easily lead to imbalance in judicial standards and undermine the authority and fairness of the law.

It must be emphasized that the key to determining infringement lies not in whether the "core element" has been changed, but in whether the "core expression" of the original work has been retained. Although AI face swapping replaces the face—a core element and visual focus of the audiovisual work—it is limited by the basic condition of "only changing the face" and does not alter the original work's original expressions in content arrangement, scene design, cinematography, and other aspects. Therefore, it still constitutes "substantial similarity" (Zhang & Wang, 2025).

For AI face swapping, a combined approach of the "overall impression method" and the "abstraction-filtration-comparison method" should be adopted. The former judges whether the two works are similar in overall impression from the perspective of ordinary viewers, forming a preliminary determination. The latter breaks down the core expressive elements of the work, such as plot structure, character settings, audiovisual arrangement, etc. If these original elements are highly identical and not in the public domain, similarity can be established. In other words, even if the face is replaced, as long as the original work's creative expression, artistic style, narrative rhythm, and other elements are similarly retained, it is sufficient to constitute "substantial similarity" in the legal sense (Xu, 2025; Zhang & Wang, 2025).

2.1.3 Criteria for Defining "Fair Use"

As an emerging technological means, the determination of fair use for AI face swapping must be based on the core principles of copyright law, combined with the technical characteristics and practical scenarios for comprehensive judgment, and closely follow the "three-step test" (Sun & Zeng, 2025).

Firstly, from the perspective of purpose and nature of use, if the face-swapping behavior is solely for personal study or research, or used for commentary, news reporting, teaching, and other public-interest categories, and is not for profit, it is generally included within the scope of fair use. Secondly, the nature of the used work must be considered. For published works, especially those that are factual or highly public-interest oriented, the space for fair use is relatively larger. Finally, the key lies in assessing the impact of the use on the potential market or value of the original work. If the AI face-swapped work directly competes with the original work, seizes its market share, or damages its artistic or commercial value, it will inevitably divert the audience of the original film and harm the economic interests of the copyright owner, and thus cannot be recognized as fair use. However, if it constitutes transformative use—by giving the work a new expressive meaning and artistic style through face swapping (for example, replacing characters in a serious historical documentary with anime images to create a new work with satirical or humorous effects)—and

does not cause substantial impact on the market of the original work, but instead expands the dissemination dimension of the work, it should be recognized as fair use (Zhao, n.d.).

2.2 Determination of Portrait Right Infringement

In AI face swapping, if a user uses another person's portrait to create face-swapped videos without consent, it may constitute infringement of the portrait right. If the face-swapping act is intended to derogate another person's reputation, it may constitute infringement of the right of reputation. At the same time, biometric information such as faces belongs to personal information; if the processing of such information fails to meet conditions such as obtaining consent and clearly stating the purpose, it may involve infringement of personal information rights (Zhang & Hou, 2024). Today's AI face-swapping technology continues to improve the realism of forgeries, evolving from the initial crude static facial replacement to the current expansion into dynamic elements such as body movements and scene associations, as well as the integration of virtual avatars with real portraits. It can achieve perfect synchronization of voice, lip movements, and expressions, and even simulate a specific person's demeanor and actions (Sun & Zeng, 2025). This makes it difficult to judge the "identifiability" standard of whether AI face swapping "points to a specific natural person" and the boundary of fair use.

2.2.1 Difficulties and Norms in Determining the Identifiability Standard

In theory, the traditional protection of portrait rights mainly adopts the "core theory of facial features," focusing on facial characteristics. However, with the development of AI face-swapping technology, elements such as voice, posture, background scenes, and iconic actions have gradually been incorporated into the scope of identifiability judgment. In judicial practice, the Beijing Internet Court, in the case of Liao v. A Certain Company (Network Tort Liability Dispute), pointed out that when the identifiable facial features of a character in a video are removed and replaced, the public cannot establish a one-to-one correspondence between the template video and the original face, and thus it does not constitute portrait right infringement. In contrast, some courts have held that, by comparing the face-swapped video with the original video material, ordinary people can still identify the corresponding subject of the body image through unmodified corresponding scenes and details, thereby constituting infringement (Beijing Internet Court, 2023). This phenomenon of different judgments in similar cases fully highlights the confusion in the judicial application of the identifiability standard. There is no uniform standard for the weight given to identifying elements such as voice, clothing, and posture across different cases. In some cases, even when multiple non-facial identifying elements exist, courts may refuse to recognize infringement on the grounds that a stable corresponding relationship sufficient to identify a specific natural person cannot be formed.

The traditional "core theory of facial features" holds that the face is the most direct and stable element of personality identification. If AI face swapping completely replaces the facial features without leaving obvious residual characteristics, the original subject is no longer identifiable. This position emphasizes the certainty and exclusivity of identification and seeks to avoid excessive expansion of the boundaries of portrait rights. However, the core of judicial determination in the protection of portrait rights is "identifiability," rather than "whether the face is used." The underlying logic of legal protection of portrait rights is not to protect the "face" itself, but whether the "person" can be identified through "external image or factors," thereby infringing on "personal information." Therefore, the traditional core theory of facial features has certain limitations.

In comparison, the comprehensive elements identification theory advocates that "as long as the technically synthesized content can lead the general public to reasonably associate 'this person is that person,' it should fall within the scope of portrait right protection." That is, even if individual elements alone may not identify a specific person, the aggregation of elements such as body shape, clothing, hairstyle, habitual movements, voice, and scene background can still allow the public to associate them with a specific natural person, and the image should be deemed identifiable. In other words, aggregated elements can be regarded as "personal information." Such a standard better aligns with the legislative intent of Article 1018 of the Civil Code, which refers to "identifiable external image," and can effectively prevent "edge-ball" (circumvention) behaviors under the law.

2.2.2 Difficulties and Basis for Determining "Commercial Use" of Portraits in AI Face Swapping

With the diversification of profit models of artificial intelligence platforms, which often claim to be "non-commercial" or "public-interest oriented," it has become difficult to clearly define the "profit-making purpose" when using others' portraits. Consequently, the determination of fair use in AI face-swapping portrait right infringement disputes has fallen into a gray area (Liang, 2025; Zhao, n.d.).

The judgment of whether AI face-swapping behavior constitutes commercial use should not take "direct profit" as the sole criterion. Instead, it should comprehensively consider the context, purpose, and "potential commercial value" of the behavior in order to safeguard the interests of market entities (Zhao, n.d.). In addition, some behaviors that appear not to involve direct profit—such as using AI face-swapped videos to attract users to recharge membership fees or increase platform activity—should still fall within the scope of commercial use because they ultimately serve the goals of commercial operation. At the same time, the commercial value of the portrait right holder's own image must be considered. For public figures, their portraits often carry high commercial endorsement value; unauthorized commercial use of AI face swapping is more likely to damage their legitimate commercial endorsement rights. Therefore, the determination in such cases should be stricter.

To address the problem of ambiguous standards, the "reasonable association" principle can be fully applied. Factors such as the dissemination volume of the face-swapped content, fan growth data, and the timing of commercial monetization should be comprehensively considered to determine whether the face-swapping behavior is the primary contributing factor to commercial benefits. If the commercial benefits mainly derive from the creator's other abilities—such as promotional rhetoric or format innovation during live streaming—the degree of recognition as commercial use may be appropriately lowered.

2.2.3 Determination of "Transformative Use" of Portraits in AI Face Swapping

In determining whether AI face-swapping behavior constitutes "purposeful transformative use" of a portrait and thus falls within the scope of fair use, the single focus on "profit-making nature" should likewise be abandoned. Instead, the analysis should focus on whether the purpose and method of using the original portrait have undergone a substantial change, thereby transcending the existing function and value of the original portrait (Yang & Deng, 2024). Therefore, it is advisable to draw on the "market and function" dual analysis method proposed in the copyright field and construct a comprehensive judgment standard centered on "purpose and nature of use," combined with "method and effect of use" (Feng & Diao, 2019).

At the core of the judgment, it is necessary to examine the primary purpose and substantive function of the behavior. If it is merely substitutive dissemination or commercial exploitation—for example, using another person's portrait to increase video appeal or directly monetize its commercial or dissemination value—it does not meet the conditions for purposeful transformation. However, if it is used for parody, satirical commentary, news reporting, academic research, etc., and employs the portrait as a means of innovative expression to convey new ideas or information, it may be recognized as fair use. Regarding the effect of the behavior, a comprehensive assessment is required as to whether it causes undue harm to the portrait right holder's reputation or commercial interests, whether the use complies with the principle of proportionality and is limited to the necessary scope, and whether a balance can be achieved between the social public value of the transformative use and the harm to individual rights.

3. Research on the Aggregation of Copyright and Portrait Right Infringements in AI Face Swapping

Copyright determination centers on originality. AI face swapping merely replaces the face without adding personalized expression and thus constitutes substantial similarity. Portrait right determination centers on identifiability: as long as the image generated by AI face swapping can be identified by the public as a specific natural person, it is suspected of infringement regardless of whether there is a profit motive. When a single AI face-swapping act infringes both copyright and portrait rights simultaneously, the principles for determining these two legal risks provide a clear logical starting point and basis for analyzing the liability of multiple subjects in AI face swapping.

In the field of AI face swapping, the subjects are diversified, mainly involving technology users, platforms, and AI face-swapping developers.

Users of AI face-swapping technology should bear dual aggregated liability (Liang, 2025). If they engage in face-swapping without authorization, they shall bear portrait right infringement liability regardless of whether the purpose is profit-making. They must cease the infringement, eliminate the adverse effects, apologize, and pay appropriate compensation for mental distress. If the act also constitutes copyright infringement, they must additionally pay corresponding economic compensation to the copyright owner, following the principle of "dual compensation, calculated separately."

Platforms providing AI face-swapping technology should strengthen their pre-review and post-supervision obligations (Zhang & Hou, 2024; Zhang & Wang, 2025). Platforms play a dual role as both "infringer" and "governor." Their liability allocation must comply with the dual constraints of the "notice-and-takedown" rule and the "red flag" principle. They should establish strict portrait right authorization review mechanisms to control the source of face-swapping materials uploaded by users. When a platform knows or should know that the AI face-swapped content involves copyright or portrait right infringement and fails to promptly fulfill its "reasonable care" obligation by taking necessary measures such as deletion or blocking, it shall bear joint and several liability together with the direct infringer (Zhang & Hou, 2024).

The liability of providers of AI face-swapping technology must take into account both the neutrality and fault of the technology. If, during the development and operation of the face-swapping technology, the technology provider fails to establish necessary authorization verification mechanisms, allowing users to easily obtain others' portraits or works for face-swapping operations, and fails to fulfill reasonable prompting and notification obligations, thereby enabling large-scale infringement, the technology provider shall bear presumed fault liability for the damages arising from copyright and portrait right infringements (Zhang & Bian, 2025).

4. Conclusion

The legal risk determination of AI face-swapping technology must focus on three core dimensions: copyright infringement, portrait right infringement, and the determination of aggregated liability between the two. In determining copyright infringement, if the face-swapping behavior retains the original work's core original expressions such as camera movement, content arrangement, and music, while only replacing the face element, it essentially constitutes illegal use of the original work and amounts to "substantial similarity." Even if AI technology is used as a tool, liability cannot be exempted. In determining portrait right infringement, "identifiability" is the key: as long as the face-swapped result can point to a specific natural person, any use without consent is suspected of infringing the portrait right, regardless of whether it is for profit. If it involves malicious uglification or fabrication of facts, it may simultaneously infringe the right of reputation. When the AI face-swapping material is an original work containing another person's portrait, rights aggregation occurs. In such cases, the infringing subject must simultaneously bear liability for both types of infringement; platforms must fulfill their active review obligations for obviously infringing content in accordance with the "red flag principle," otherwise they will bear corresponding joint and several liability; and providers of generative artificial intelligence services should also bear corresponding presumed fault liability.

Studying the issue of legal risk determination in AI face swapping is a key measure to balance technological development and rights protection in the digital era. From the judicial perspective, new types of disputes triggered by AI face swapping—such as portrait right and copyright infringements—occur frequently. The existing adjudication standards are ambiguous, and the phenomenon of different judgments in similar cases is prominent. In terms of institutional construction, there is currently a lack of specialized legal rules targeting AI face swapping, and key issues such as liability allocation and compensation standards lack clear basis. Therefore, researching risk determination can promote the refinement and improvement of relevant legal norms, safeguard trust and order in the digital society, and build a solid legal defense line for guiding technology toward goodness.

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