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Legal Risks and Opportunities of Using Artificial Intelligence in Web Development: Issues of Intellectual Property and Liability

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Abstract: This article examines the legal aspects of artificial intelligence (AI) use in web development from intellectual property and liability perspectives within Uzbekistan's legal framework. The author analyzes current national legislation, including the Law "On Copyright and Related Rights," Civil Code, and Law "On Electronic Commerce," identifying significant gaps in AI technology regulation. The research reveals that Uzbekistan's legislation, like most international legal systems, does not grant copyright protection to content created solely by AI without substantial human creative contribution. This creates legal uncertainty for developers using AI to generate web content. A comparative analysis with international approaches (EU, US) and recommendations from international organizations (WIPO, OECD) identifies opportunities for legal reform. The study shows that under current Uzbek law, liability for AI-generated content likely falls on human developers or service providers, potentially exposing them to unforeseen legal risks, particularly as AI "safe harbor" provisions for online intermediaries may not apply to AI-generated content. The article proposes several recommendations: clarifying the IP status of AI-assisted works while maintaining the human-centric approach to copyright; introducing exceptions for text and data mining for AI training; strengthening the liability framework for AI deployments with clear rules on responsibility allocation; updating e-commerce laws to address AI-generated content; building judicial capacity through guidelines and training; and pursuing international cooperation to harmonize Uzbekistan's approach with global best practices. These measures would help Uzbekistan navigate the legal challenges of AI while fostering innovation and protecting rights holders in the digital economy.

Keywords: Artificial intelligence, intellectual property, liability, web development, Uzbekistan.

Introduction

Artificial intelligence (AI) is increasingly used in web development for tasks such as code generation, content creation, and automated decision-making. These innovations promise efficiency and creativity gains, but also raise complex legal questions regarding intellectual

property (IP) and liability. In the context of Uzbekistan, which is embracing digital development, the legal framework must address who owns AI-generated code or content and who bears responsibility if AI causes harm. National laws, like the Law "On Copyright and Related Rights" and the Civil Code, were not originally designed with autonomous AI creations or decisions in mind. As AI systems operate with a degree of autonomy, they challenge traditional legal notions of "authorship" and "producer" that presuppose human agency. Likewise, if an AI-driven feature on a website produces defamatory or infringing material, it is unclear under current laws who is liable – the developer, the user, or some other entity. Internationally, policymakers and courts are grappling with similar issues. Courts have affirmed that only human beings can be authors or inventors under existing IP laws (Sorry, DABUS. AI cannot be an inventor on a U.S. Patent | Perspectives | Reed Smith LLP), and organizations like WIPO and the OECD have begun to issue principles and hold discussions on AI governance (AI Principles Overview - OECD.AI). This article provides a comprehensive analysis of the legal risks and opportunities of using AI in web development, focusing on IP and liability issues in Uzbekistan. It examines Uzbekistan's national legislation and judicial practice, compares it with international approaches (EU, US, and others), and offers recommendations for legal reform and enforcement in Uzbekistan. The goal is to identify how Uzbek law can evolve to both protect against AI-related risks and foster innovation.

Materials and Methods

The research employs a doctrinal and comparative legal methodology. Primary sources include Uzbekistan's national laws (such as the Law "On Copyright and Related Rights" 2006, the Law "On Informatization" 2003, the Civil Code, and the Law "On Electronic Commerce" 2022) and relevant subordinate acts. Specific provisions of these laws are analyzed to determine how AI-generated works and AI-related liability are treated under current Uzbek law. For instance, Article 3 of the Copyright Law defines an "author" as a natural person whose creative effort produced a work, and Article 8 explicitly excludes works created without human creative activity from copyright protection (Law of the Republic of Uzbekistan No. LRU-42 of July 20, 2006, on Copyright and Related Rights). Such provisions are examined to assess their implications for AI-generated content. Judicial practice in Uzbekistan, while still nascent on AI issues, is reviewed to the extent available – for example, interpretations of general tort principles in the Civil Code (Article 985 on compensation for damage) by Uzbek courts (My5 v. AIMC&CRA: available private and public law remedies – Uzbekistan Law Blog).

International legal instruments and comparative materials form the second pillar of the research. This includes analyzing EU regulations (notably the proposed EU Artificial Intelligence Act and relevant directives), US legislation and case law (e.g. recent cases on AI and IP or liability), WIPO treaties and issues papers, and OECD recommendations on AI governance. These sources help illustrate how other jurisdictions are addressing AI's legal challenges. For example, the OECD's AI Principles (2019, updated 2024) promote accountable and transparent AI use (AI Principles Overview - OECD.AI), and the WIPO "Conversation on IP and AI" has identified issues like AI authorship, inventorship, and infringement exceptions as key areas for policy development. Academic literature from international journals (including Harvard Law Review notes, Journal of Internet Law articles, and other peer-reviewed sources indexed in Scopus/Web of Science) is surveyed to gather scholarly opinions and theoretical frameworks. This literature review provides insight into divergent views – for instance, many scholars concur that human creativity is a prerequisite for IP rights, in line with prevailing law (Artificial Intelligence Impacts on Copyright Law | RAND), while others argue for adapting IP law to accommodate AI-generated works to avoid stifling innovation.

By combining analysis of Uzbek law with comparative perspectives and scholarly commentary, the research identifies gaps in the current legal framework and potential reforms. A comparative analysis is also made with neighboring Central Asian countries' approaches to AI (e.g.,

Kazakhstan's and Kyrgyzstan's legal stances) where information is available, to situate Uzbekistan's position regionally. The methodology is qualitative and analytical, focusing on legal texts, interpretative practice, and policy documents. All sources used are reliable legal texts, court decisions, or reputable academic and professional publications; informal sources like Wikipedia are avoided. Citations are provided in APA style for all referenced materials, and a categorized bibliography is included.

Research Results

Uzbekistan's Legal Framework on AI, IP, and Liability: Uzbekistan's current legislation does not explicitly regulate AI in web development, but existing laws provide a baseline for addressing IP and liability issues. The Law of the Republic of Uzbekistan "On Copyright and Related Rights" (No. ZRU-42, 2006, as amended) is the primary act governing copyright. This law makes clear that only creations with human involvement can be protected. It defines an **author** as a natural person who created the work. Consequently, works generated entirely by a machine without a human author are outside the scope of copyright. Article 8 of the Copyright Law lists materials that are not subject to copyright, including "results obtained with the help of technical devices *without the creative activity of a person* directed at the creation of an individual work" (Law of the Republic of Uzbekistan No. LRU-42 of July 20, 2006, on Copyright and Related Rights). This provision squarely applies to AI-generated outputs produced autonomously. For example, if an AI system in a web application writes software code or generates an image with minimal human input, that output would likely be considered unprotected by copyright under Uzbek law. No court cases in Uzbekistan have yet directly tested this clause with AI, but its language is unambiguous in requiring human creativity. Notably, Uzbek law does make a limited exception in the context of cinematographic works: the producer of a film (who can be a legal entity) is recognized as a rightsholder, but this is a specific context and does not extend to AI creations generally (AI vs. Copyright: Navigating the Legal Maze of Generative AI Content Creation – Uzbekistan Law Blog). In sum, under current Uzbek IP law, AI-generated web content (texts, code, graphics, etc., created by AI without human co-authorship) would not qualify for copyright by default. This presents a **risk** for developers seeking to protect AI-created works – there is no ownership right, meaning such outputs fall into the public domain and can be freely used by others. It also presents an **opportunity** in terms of public access to AI-generated works, but possibly at the expense of the creator's commercial interests.

Relatedly, Uzbekistan's Law "On Informatization" (No. 560-II, 2003) and Law "On Electronic Commerce" (new edition No. ZRU-792, 2022) regulate aspects of online activity. The E-Commerce Law addresses the obligations of "information intermediaries" (e.g., internet service providers and platform operators). Under Article 13 of the previous edition of this law, information intermediaries are not legally responsible for the content of electronic documents or communications transmitted by others in e-commerce (INTA Intermediary Liability and Takedown Policies in Asia). Moreover, regulations (Cabinet of Ministers Resolution No.185 of 2016) explicitly state that intermediaries have no duty to monitor or verify the information they transmit or store (INTA Intermediary Liability and Takedown Policies in Asia). This safe harbor regime, similar to those in EU and US law, means that Uzbek ISPs or web hosts generally are not liable for user-generated content if they play a passive role. However, AI complicates this picture: if a web service itself deploys an AI to generate content (for instance, an AI chatbot on an e-commerce site that autonomously produces product descriptions or answers customer queries), the service provider is not merely an intermediary but the source of the content. The current safe harbor provisions might not apply, since the content is not from a third-party user but from the AI tool the provider controls. No explicit provision in Uzbek law addresses this scenario. Therefore, **liability risks** exist for web developers using AI: they could be deemed the publishers of AI-generated content and held liable for any illegal or harmful material that the AI produces (such as defamation, privacy violations, or infringement of someone else's IP). This risk is heightened by

the fact that AI "hallucinations" – incorrect or fabricated outputs – are a known issue. Developers cannot fully predict AI behavior, yet under current law they may bear full responsibility for the AI's output as if they authored it.

The Civil Code of the Republic of Uzbekistan provides the general rules on obligations and liability (tort and contract). Article 14 of the Civil Code defines recoverable losses, including actual damage and lost profits, and Article 985 establishes the general grounds for liability for harm (My5 v. AIMC&CRA: available private and public law remedies – Uzbekistan Law Blog). Under Article 985, any harm caused by an illegal act must be compensated in full by the person who caused it, and the responsible party is relieved from liability only if they prove absence of fault (except in cases of strict liability defined by law) (My5 v. AIMC&CRA: available private and public law remedies – Uzbekistan Law Blog). This general tort principle means that if an AI system malfunctions or makes a harmful decision (for example, an AI in a web service recommends illegal content or causes a security breach), the injured party can seek compensation from the person or entity whose actions (or omission of proper oversight) led to the damage. Since AI has no legal personhood, liability will trace back to a human or corporate actor (such as the developer, the website owner, or the AI operator). Uzbek law does recognize strict liability in certain contexts: for instance, entities engaged in activities that pose an increased danger to others (like operating vehicles or industrial equipment) are liable for resulting harm regardless of fault. While this provision (analogous to the concept of *"source of increased danger"*) was not written with AI in mind, one could analogize that deploying a powerful autonomous AI could be seen as a high-risk activity. However, there is no jurisprudence yet treating AI systems as sources of strict liability in Uzbekistan. In absence of specific rules, general negligence standards apply – web developers must exercise due care in designing and managing AI features to avoid foreseeable harm, or else face potential negligence claims.

Comparative International Perspectives: In the international arena, similar legal issues are being addressed through a mix of legislation, court rulings, and scholarly debate.

Intellectual Property: Globally, there is a consensus in existing law that IP protection (copyrights, patents) requires human inventiveness or creativity. Courts and IP offices in the United States and Europe have consistently held that AI or other non-humans cannot be the legal author or inventor of a work. For example, the U.S. Court of Appeals for the Federal Circuit in *Thaler v. Vidal* (2022) affirmed that under U.S. patent law an inventor must be a natural person, rejecting an AI (the DABUS system) as a patent inventor (Sorry, DABUS. AI cannot be an inventor on a U.S. Patent | Perspectives | Reed Smith LLP). In the realm of copyright, the U.S. Copyright Office and courts have a long-standing position, illustrated by cases like the "Monkey Selfie" case (*Naruto v. Slater*, 9th Cir. 2018), that works not created by human authors are not eligible for copyright. The U.S. Copyright Office recently reiterated that any portion of a work that is computer-generated without human involvement will not be registered (Artificial Intelligence Impacts on Copyright Law | RAND). European IP regimes are similar: the EU's copyright framework (guided by the Berne Convention and national laws) also ties authorship to natural persons, and there is no provision for AI-generated works to be independently protected. Some countries like the UK, however, have a unique provision in their law (Copyright, Designs and Patents Act 1988, Section 9(3)) stating that for a "computer-generated" work with no human author, the person who undertakes the arrangements for the creation of the work is deemed the author. This effectively grants a form of copyright to AI-produced works by assigning authorship to the developer or user who caused the creation. The UK's approach is an outlier meant to provide incentive for creation of such works, whereas jurisdictions like Uzbekistan (and most others) currently have no such concept – as noted, Uzbek law expressly places AI-generated results outside copyright (Law of the Republic of Uzbekistan No. LRU-42 of July 20, 2006, on Copyright and Related Rights). The **opportunity** here is a policy choice: Uzbekistan could consider an approach to extend limited copyright-style protection to AI-generated works (perhaps

to the person deploying the AI), to encourage investment in AI creative tools. Conversely, maintaining the status quo ensures AI outputs remain free for all to use, prioritizing the public domain – a stance many scholars defend as promoting freedom of information when no human author's rights are at stake (Artificial Intelligence Impacts on Copyright Law | RAND).

Another IP issue is how training data and AI outputs might infringe existing rights. AI systems learn from large datasets, which often include copyrighted material (code, text, images). In Uzbekistan, there is no specific exception in the law permitting use of copyrighted content for machine learning (such as a text and data mining exception). By contrast, the European Union introduced such exceptions in its 2019 Directive on Copyright in the Digital Single Market (Articles 3 and 4) to allow text and data mining by AI, subject to certain conditions, aiming to balance innovation with rights holders' interests. Uzbek law's silence means general rules apply: any reproduction of protected content for training an AI could be viewed as infringement unless it falls under fair use or another exception (Uzbekistan's copyright law contains some exceptions for personal use, education, etc., but nothing explicitly for data analysis or AI training). However, enforcement in this context is untested. The **judicial practice** in Uzbekistan has not yet seen cases of authors suing over AI's use of their works. The Uzbekistan Law Blog notes that currently "there is no explicit obligation for creators of chatbots or similar algorithms to avoid violating copyright while using data," making it difficult to find a legal basis for claims against AI developers for training-data usage (AI vs. Copyright: Navigating the Legal Maze of Generative AI Content Creation – Uzbekistan Law Blog). Internationally, litigation is emerging on this front: for example, in the United States and UK, artists and programmers have filed lawsuits against AI developers (such as the makers of image generator Stable Diffusion and code generator GitHub Copilot) alleging that these AI systems' training on copyrighted works without permission amounts to infringement. The outcomes of such cases remain pending, but they signal a trend.

Liability and Accountability: On the liability side, different jurisdictions are exploring how to apportion responsibility for AI-driven actions. In the European Union, alongside the draft AI Act, there is a proposed AI Liability Directive (and an updated Product Liability Directive) which would facilitate claims for damage caused by AI by, for instance, easing the burden of proof on victims in certain high-risk AI scenarios. The EU AI Act itself (as of the European Parliament's 2023 text) would impose obligations on providers of certain AI systems, including so-called "foundation models" and generative AI, to ensure transparency and safety. Notably, Article 28b(4) of the draft EU AI Act defines "generative AI" and requires providers of such models to implement reasonable measures to **prevent the generation of illegal content** and to respect intellectual property in their training data (AI vs. Copyright: Navigating the Legal Maze of Generative AI Content Creation – Uzbekistan Law Blog). Providers would have to disclose summaries of copyrighted data used in training, under the Parliament's proposals. While the EU AI Act is not yet law, it exemplifies a preventative regulatory approach to AI risks. Uzbekistan so far lacks analogous rules; however, the government has signaled interest in AI development through strategic documents like the "Digital Uzbekistan – 2030" Strategy and related presidential decrees on AI implementation (AI vs. Copyright: Navigating the Legal Maze of Generative AI Content Creation – Uzbekistan Law Blog). These emphasize expanding AI use but do not yet furnish a detailed legal framework. This gap means that, for now, common-law principles and existing statutes (like the Civil Code) are what Uzbek courts would turn to in an AI liability dispute.

Comparatively, in the United States there is no comprehensive AI law, but courts are beginning to address AI liability through existing doctrines. A recent notable case is a defamation suit against OpenAI by a Georgia radio host, where ChatGPT falsely output text accusing him of embezzlement. In early 2024, a U.S. state court judge allowed this case to proceed, rejecting arguments that existing immunity for internet platforms should bar it (Judge Denies Motion to Dismiss AI Defamation Suit | Alerts and Articles | Insights | Ballard Spahr). Section 230 of the

U.S. Communications Decency Act provides immunity to online services for third-party content, but it remains undecided if an AI's generated content counts as "third-party" (since it is created by the AI, not a human user). The court's refusal to dismiss suggests that AI companies might be treated as originators or publishers of AI outputs, not mere intermediaries. This development parallels the situation under Uzbek law: a web developer integrating AI could likewise be seen as the originator of its content and not shielded by the intermediary protections of the E-Commerce Law. In sum, internationally and in Uzbekistan, the legal trend is toward holding the deployers of AI accountable for the technology's actions, while immunity doctrines and liability shields are narrowed in their applicability.

Another angle is product liability: if AI in a web service is considered a product or service, defects in its design could trigger liability. For instance, if an AI-based recommendation engine in an e-commerce site causes a safety issue (say, by recommending dangerous instructions to a user), the question arises whether this is akin to a defective product. Under Uzbek law, a claim could theoretically be framed as a breach of the obligation to ensure safety of services provided, or under general tort for negligence in design. Central Asian neighbors have yet to establish any AI-specific liability rules either. Kazakhstan, for example, is studying improvements to its laws for AI-generated works and likely would treat AI incidents under general civil law as well (Copyright Protection on Works Generated by Artificial Intelligence). To date, no Central Asian country has introduced legislation that squarely addresses AI civil liability or grants legal personality to AI.

Analysis of Research Results Authorship and Intellectual Property – Critical Analysis: The research results reveal a clear gap in Uzbekistan's IP regime when it comes to AI-generated works. Uzbek law's insistence on human authorship aligns with international norms and is rooted in the very purpose of copyright (to reward human creativity). The justification for this stance is strong: granting copyright to non-human creations could conflict with fundamental copyright principles and international treaties (the Berne Convention assumes authors are human). Moreover, as scholars note, extending exclusive rights to works without a human author could actually harm the public domain and impede access to information (Artificial Intelligence Impacts on Copyright Law | RAND). The author of this article supports the position that a work produced entirely by AI should not be automatically copyrighted – there is logic in treating such output as *sui generis* or public domain, since no person expended creative labor. However, a critical issue is the degree of human involvement. The law in Uzbekistan currently draws a binary: either a person's creative activity is present (then the work is protected) or it's a purely technical result (then no protection) (Law of the Republic of Uzbekistan No. LRU-42 of July 20, 2006, on Copyright and Related Rights). In practice, many AI-assisted works fall in a gray area. For example, a web developer might use an AI tool to generate portions of code or design, and then the developer modifies and integrates those into a larger human-created project. Is the resulting web application protected by copyright? Likely yes, because of substantial human creative contribution in selection, arrangement, and modification – the AI is just an assistive tool. This is analogous to how the US Copyright Office distinguishes AI-assisted works (which can be protected if a human's contribution is substantial) from fully AI-generated works (Artificial Intelligence Impacts on Copyright Law | RAND) (Artificial Intelligence Impacts on Copyright Law | RAND). Uzbek law does not explicitly articulate this distinction, but it could be interpreted similarly: the *individual parts* produced solely by AI would lack protection, yet the *work as a whole* might attain originality through the human developer's input. It would be prudent for Uzbek law or court practice to clarify this, perhaps by guidance or amendment, to avoid uncertainty for developers using AI in their creative process.

There is also the question of whether Uzbekistan should introduce a concept akin to the UK's "computer-generated works" provision. The **analysis** here weighs innovation incentives against doctrinal purity. On one hand, providing a short-term sui generis right to the person deploying AI (e.g., a 5- or 10-year exclusive right to exploit an AI-created work) could incentivize local startups

and content creators to invest in AI tools, knowing they have some protection for the outputs. On the other hand, such an approach deviates from the human-centric notion of IP and might isolate Uzbekistan if not harmonized with international practice. Internationally, no widely adopted treaty requires protection for AI-generated works – in fact, **EU and U.S. practice currently reject such protection** (Artificial Intelligence Impacts on Copyright Law | RAND) (Artificial Intelligence Impacts on Copyright Law | RAND). Introducing a new category of IP right domestically might conflict with Uzbekistan's obligations under Berne (which mandates protection of authors' works, implying human authors). A critical viewpoint is that alternative mechanisms (like contracts and trade secrecy) can fill the gap: developers can use licensing agreements or confidentiality to control AI outputs when needed, without stretching copyright law. The author's position is cautiously against creating new IP rights for AI-generated works at this stage. The opportunities presented by AI – such as rapid content generation – can still be harnessed under the current regime, and developers can be creative in involving human authors (for instance, treating AI output as a draft which a human then edits, thereby ensuring the final work has human authorship and qualifies for protection). Instead of new rights, **Uzbekistan should focus on clarifying existing law**, perhaps via an explanatory note to the Copyright Law or judicial interpretation, on how to treat AI-assisted works. This clarity will help web developers understand what portions of their AI-aided creations are protected and how they might assert rights or avoid infringing others' rights.

From an IP infringement perspective, Uzbek law needs to address the liability of AI developers for training data and output. Currently, if an AI included copyrighted text in its output (say an AI web content generator reproduces portions of someone else's article), theoretically the person using the AI or offering the AI service could be liable for infringement. The user of the AI might claim they had no knowledge (the AI is a black box), but ignorance is generally not a defense to copyright violation if one is distributing the infringing content. On the flip side, holding AI developers or users liable for every inadvertent output could severely chill AI deployment. A balanced approach, learning from international practice, would be to introduce a **safe harbor or exception for AI outputs** that inadvertently incorporate minor fragments of copyrighted material, coupled with a notice-and-takedown mechanism. For example, the law could provide that an AI service provider is not liable for copyright infringement in AI-generated output *unless* it is shown that the provider failed to implement reasonable measures to prevent unauthorized copying, or failed to act expeditiously to remove infringing output upon notification. This would echo the logic of the E-Commerce Law's intermediary protections but tailored to AI as a quasi-intermediary. Currently, Uzbekistan has no such provision, and as noted, creators of AI do not have duties regarding training data usage (AI vs. Copyright: Navigating the Legal Maze of Generative AI Content Creation – Uzbekistan Law Blog). The author argues that Uzbekistan should consider incorporating a text/data mining exception into its copyright law (as in EU law) to legalize the training of AI on datasets, while also perhaps requiring AI developers to respect opt-outs by rights holders. This would reduce legal uncertainty for AI development in web services – an **opportunity** to align with global best practices and attract AI-related business – and at the same time protect rights holders by giving them a mechanism to object if their content is misused.

Liability Issues – Critical Analysis: The research results indicate that under Uzbek law, responsibility for AI actions in web development will fall on human or organizational actors by default. One significant risk is that developers or companies might underestimate their potential liability exposure when integrating AI. The case of AI defamatory content (like the ChatGPT example in the US) shows how quickly legal responsibility can come back to the AI provider (Judge Denies Motion to Dismiss AI Defamation Suit | Alerts and Articles | Insights | Ballard Spahr). In Uzbekistan, if an AI module on a website published false information damaging someone's reputation, the injured party could sue the website owner or AI developer for libel under civil law and perhaps relevant media or information laws. Unlike the US, Uzbekistan does

not have an equivalent of Section 230 immunizing online platforms broadly – instead, liability is determined by general principles and specific laws. The Law "On Informatization" and related regulations aim to combat unlawful online content (Uzbekistan has mechanisms for state authorities to demand removal of illegal content), so a developer could also face regulatory action if their AI system disseminates prohibited information (extremism, defamation, etc.). A **comparative analysis** with international practices suggests that clarity is needed on how far a developer's duty of care extends. In some jurisdictions, there is discussion of requiring AI operators to carry insurance or adhere to certain standards to limit liability. Uzbekistan might similarly consider imposing obligations on those deploying AI in sensitive applications (for example, an obligation to conduct testing or risk assessments for AI used in public-facing web services). This could be done via amendments to the Law on Electronic Commerce or a new legislative act on digital services.

Another liability dimension is contract: web developers often rely on contracts and terms of service to allocate risk. For instance, a developer using a third-party AI API in their site will have a contract with that AI provider, and the end-users will agree to terms of use. These contracts may include disclaimers of liability for AI errors or indemnities. Uzbek contract law generally allows such allocations, though liability for harm to life, health, or caused by gross negligence often cannot be fully disclaimed. From the standpoint of **law enforcement practice**, Uzbek courts will likely uphold clear disclaimers about AI limitations (similar to how OpenAI's terms warned users that ChatGPT may "hallucinate" facts (Judge Denies Motion to Dismiss AI Defamation Suit | Alerts and Articles | Insights | Ballard Spahr)). However, contractual disclaimers do not protect against claims by third parties who never agreed to them (e.g., a person defamed by the AI didn't agree to any terms). Thus, while contracts are part of the risk management, they are not a complete solution. The author's position is that a mix of **ex ante regulation** and **ex post liability rules** is needed. Uzbekistan can draw on international models here: the OECD and EU stress *accountability* of AI system deployers (AI Principles Overview - OECD.AI). One idea is to implement a requirement that developers register or disclose the use of high-risk AI systems and perhaps adhere to an ethical or technical standard (for example, Uzbekistan might adapt something from the OECD AI Principles or EU requirements as guidelines). Compliance with such standards could then be a factor in liability – if a developer followed recognized best practices in designing and monitoring the AI, that could weigh against finding them negligent.

The comparative analysis with other Central Asian countries shows that none have leapfrogged Uzbekistan in addressing these issues; most are waiting and watching international developments. This means Uzbekistan has an opportunity to become a regional leader by proactively updating its laws. Given the government's digital transformation agenda (evidenced by the "Digital Uzbekistan 2030" initiative), there is political will to modernize laws for new technologies (AI vs. Copyright: Navigating the Legal Maze of Generative AI Content Creation – Uzbekistan Law Blog). The analysis of research results strongly suggests that legislative development should focus on **clarity and balance**: clarify how existing legal concepts apply to AI (so that courts and businesses are not guessing) and balance the need to protect the public and rights holders with the need to not over-regulate nascent AI innovation.

Comparative Legislation and International Practice: It is instructive to compare Uzbekistan's current legal posture with international practices to highlight areas for improvement. In terms of IP, Uzbekistan's laws are actually in line with the majority approach (human-centered IP, no recognition of AI authorship). Where it lags is in providing guidance or exceptions for AI-related uses. For instance, the absence of a data mining exception or guidance on AI-assisted works contrasts with the EU's detailed provisions and the nuanced approach of the US Copyright Office in recent guidance (Artificial Intelligence Impacts on Copyright Law | RAND). Uzbekistan could benefit from incorporating elements from these practices – such as explicitly stating that trivial AI contributions do not affect a human author's copyright, or allowing data analysis of published

works for AI development as a fair practice. Regarding liability, the EU's forthcoming AI-specific laws and the nuanced questions raised in US case law (like whether AI output is "publisher content" or "third-party content") provide a roadmap of issues Uzbekistan will eventually face. It would be easier to address them through legislation than to leave entirely to courts. For example, Germany's approach under existing law (as noted in comparative studies) is that the operator of an AI can be liable just like an operator of any device, which aligns with Uzbek principles – but Germany is also actively updating laws to ensure victims are not left without remedy when AI is involved. Central Asian neighbors have mostly the same Soviet-derived civil law foundations, so they too rely on general tort law for AI scenarios. Kazakhstan, in a recent academic study, recognized that their law lacks provisions on ISP liability and AI, recommending reforms in copyright for AI-generated works (Copyright Protection on Works Generated by Artificial Intelligence). This mirrors the findings for Uzbekistan.

Conclusions

This research leads to several specific conclusions and recommendations for Uzbekistan's legislation and law enforcement practice concerning the use of AI in web development:

Clarify the IP Status of AI-Assisted Works: Uzbekistan should maintain the principle that purely AI-generated works (with no human creativity) are not subject to copyright – a position consistent with international norms and Article 8 of the national Copyright Law (Law of the Republic of Uzbekistan No. LRU-42 of July 20, 2006, on Copyright and Related Rights). However, it is crucial to provide guidance on the threshold of human contribution required for protection. It is recommended to amend the Law on Copyright and Related Rights to include a clause or official explanation that if a work is produced with the assistance of AI, the work is protectable *only to the extent* of the original creative input contributed by a human author. This mirrors the approach taken by the US Copyright Office and courts (Artificial Intelligence Impacts on Copyright Law | RAND). Such an amendment would help developers understand how to combine AI outputs with their own creativity in a manner that secures IP rights. Alternatively, the Uzbek IP authority or courts could issue interpretive guidelines or precedents to this effect.

Consider a Limited Regime for AI-Generated Works: While the default should remain that AI-generated material is unowned, the legislature might explore a sui generis right or a legislative acknowledgment for certain AI-generated works. One recommendation is to study the UK model of deeming the person who arranges for a computer-generated work to be the author, and assess its pros and cons in the Uzbek context. Any such provision should be carefully limited in duration and scope, to ensure it does not unintentionally confer long-term monopolies or conflict with international IP obligations. A possible middle-ground recommendation is to grant a short-term related right (neighboring right) for AI-generated databases or content compilations, which could incentivize AI content innovation while not equating it fully with human-authored works. However, this should only be done if a clear need by industry is demonstrated; otherwise, the current framework (with no copyright for AI-only works) can suffice, allowing those works to be freely used – which can also spur creative reuse by human authors.

Introduce Copyright Exceptions and Duties Related to AI: The law should be updated to accommodate AI development practices. Specifically, adding an exception for **text and data mining** for scientific and innovative purposes would legalize the training of AI systems on datasets that include copyrighted works, as long as such use does not conflict with a normal exploitation of those works and the source is lawfully accessed. This exception, found in EU law, could be implemented with an opt-out for rights holders (so, for instance, a news website could signal that its content is not to be scraped for AI training, and AI developers would have to respect that). Concurrently, to protect rights holders, Uzbekistan could require AI developers to document the data used for training (at least in high-risk applications) and to ensure that AI outputs are accompanied by disclosures if they significantly contain copyrighted material. Although enforcing

this is challenging, setting it as a legal duty encourages better practice and provides a basis for liability if an AI system egregiously violates IP rights.

Strengthen Liability Framework for AI Deployments: It is recommended that Uzbekistan develop specific provisions addressing liability for AI systems. One approach is to amend the Civil Code or relevant IT laws to clarify that the deployer or operator of an AI system (the party who controls, commissions, or benefits from the AI in a web service) is to be treated as the liable party for any harm caused by the AI. This could be analogous to liability for agents or tools. In line with international discussions, the law could impose a form of **strict liability** for AI used in particularly high-risk situations – meaning the operator is liable for harm caused by the AI even without proof of fault, except in cases of force majeure or misuse by the victim, similar to how owners of dangerous objects are liable under Article 1005 of the Civil Code. For ordinary cases, a negligence standard can apply, but with clarity that the duty of care includes proper training, testing, and monitoring of AI. These provisions would give courts clear guidance and ensure victims are not left in a legal vacuum. It is also recommended to explore requiring **compulsory insurance** for operators of certain AI systems (for example, if in the future AI is used in self-driving cars or critical infrastructure, insurance would cover potential damages). In the context of web development, insurance or mandatory risk assessment for AI might not be urgent yet, but laying the groundwork in legislation would be forward-looking.

Update the Law on Electronic Commerce and Informatization: These laws should be updated to reflect the realities of AI-generated online content. The safe harbor for information intermediaries should be maintained for genuine intermediaries, but it should be clarified that it does not exempt content a service provider creates or significantly controls (which includes algorithmically generated content). A new article or amendment could require that providers of AI-based services implement content moderation or filtering to prevent obviously unlawful content (similar to requirements in some jurisdictions for user-generated content platforms). For instance, an e-commerce platform using AI to automatically generate product descriptions could be required to ensure the AI doesn't produce prohibited content (hate speech, etc.), and failure to do so could attract administrative liability. Additionally, transparency obligations could be introduced: if a website uses AI to interact with users (chatbots, personalized content), perhaps the law should mandate informing users that they are interacting with AI and not a human (this is a provision considered in the EU AI Act for chatbots). Such transparency can mitigate confusion and is in line with emerging global norms on AI ethics.

Judicial Capacity Building and Guidelines: Law enforcement practice will play a key role in how these issues are resolved in Uzbekistan. It is recommended that the Supreme Court of Uzbekistan consider issuing a guidance document (plenum resolution) on the adjudication of disputes involving digital technologies and AI. This could cover how to determine causation and fault when AI is involved, how to handle evidence from AI systems, and how to assign liability among multiple parties (e.g., if a third-party AI service and a local deployer are jointly involved). Moreover, training programs for judges and attorneys on AI and law should be implemented, possibly in collaboration with international organizations. Understanding technical aspects of AI will help judges critically assess claims like "the AI acted unpredictably" and decide whether that absolves the operator or not. Consistent judicial practice, guided by informed understanding, will be crucial in either deterring negligent deployment of AI or, conversely, preventing an undue chilling effect on AI adoption due to fear of liability.

International Cooperation and Harmonization: Finally, Uzbekistan should actively participate in international forums on AI governance (such as the ongoing WIPO discussions on IP and AI, or regional initiatives within the Commonwealth of Independent States for digital law harmonization). By aligning its legal updates with international best practices and treaties, Uzbekistan can ensure its developers and companies are not at a disadvantage. For example, if the

OECD AI Principles (AI Principles Overview - OECD.AI) and UNESCO's Recommendation on AI Ethics are considered baseline standards, adopting those principles into national policy can improve Uzbekistan's attractiveness as an AI development hub with a trustworthy legal environment. Harmonization with neighboring countries, at least on fundamental points, could also be pursued – perhaps through sharing knowledge and even model law provisions on AI. As Central Asia develops its tech sector, having compatible rules will facilitate cross-border digital commerce and AI deployment.

In conclusion, Uzbekistan stands at an important juncture where it can update its legal framework to address the rise of AI in web development. The current laws provide a foundation (with human-centric IP rights and general liability principles), but targeted reforms are needed to fill gaps and reduce uncertainty. By drawing on international experience – from EU regulatory initiatives to US case law to scholarly insights – Uzbekistan can craft laws that manage the **risks** of AI (IP infringement, lack of accountability, harm to users) while seizing the **opportunities** (innovation, economic growth, improved web services) that AI offers. The recommendations above urge a proactive yet balanced approach: protecting human creativity and public interests, ensuring AI developers act responsibly, and fostering an environment in which AI can be used in web development to benefit society without leaving legal ambiguities. With clear legal guidelines and effective enforcement, Uzbekistan can leverage AI as a tool for development, confident that the law will address the novel issues that accompany this transformative technology.

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