AI-ENHANCED CRIMINAL INVESTIGATIONS AND ḤUDŪD OFFENSES: A SHARĪʿAH COMPLIANCE FRAMEWORK

Abubakar Muhammad Jibril[1*], Rabiu Abdulmudallib Bello[2], Abbas Abubakar[3]
[1]Universitas Indonesia, Indonesia
[2]Ahmadu Bello University Zaria, Nigeria
[3]Kaduna State University, Nigeria
[*]Correspondent Email: Abubakar.muhammad@ui.ac.id

Abstract
The article examines the interface of Islamic law and emerging AI technology in criminal investigation. It takes the legal normative doctrinal approach to examine predictive policing and facial recognition against *Qurʾānic* evidentiary and confessionary requirements. The analysis identifies a fundamental doctrinal tension: machine-generated evidence cannot substitute for the traditional proof *Sharīʿah* requires. A hybrid model is proposed on the grounds of *maqāṣid al-Sharīʿah*, granting artificial intelligence secondary, not primary, evidence status. Safeguards include judicial oversight, open algorithms, accountability, enforcement of data protection law, and an outright prohibition on AI input where uncertainty persists. The model operates within Islamic legal doctrine, conforming to technological advancement while upholding the *Qurʾān*'s overarching commitment to justice. The study illustrates that the ethical frameworks underlying the development and deployment of AI can be consonant with Islamic teaching, specifically the values of justice and common good in the *Qurʾān* and related jurisprudence.
Keywords: Artificial intelligence; Evidentiary standards; Ḥudūd crimes.

Abstrak
Artikel ini mengkaji interaksi hukum Islam dan kecerdasan buatan (AI) yang sedang berkembang dalam investigasi kriminal. Pendekatan doktrinal normatif hukum digunakan untuk mengkaji kebijakan kepolisian prediktif dan pengenalan wajah terhadap persyaratan pembuktian dan pengakuan Al-Qur'an. Analisis ini mengidentifikasi ketegangan doktrinal yang fundamental, yaitu bukti yang dihasilkan mesin tidak dapat menggantikan bukti tradisional yang disyaratkan Syariat. Sebuah model hibrida diusulkan atas dasar maqāṣid al-Syarīʿah, yang memberikan status bukti sekunder, bukan bukti primer, kepada kecerdasan buatan. Perlindungan hukum mencakup pengawasan yudisial, algoritma terbuka, akuntabilitas, penegakan hukum perlindungan data, dan larangan langsung terhadap input AI jika terdapat ketidakpastian. Model ini beroperasi dalam doktrin hukum Islam, sesuai dengan kemajuan teknologi sekaligus menjunjung tinggi komitmen Al-Qur'an yang menyeluruh terhadap keadilan. Studi ini menggambarkan bahwa kerangka etika yang mendasari pengembangan dan penerapan AI dapat selaras dengan ajaran Islam, khususnya nilai-nilai keadilan dan kebaikan bersama dalam Al-Qur'an dan yurisprudensi terkait.
Kata Kunci: Kecerdasan buatan; Standar pembuktian; Kejahatan hudūd.

DOI: 10.24252/aldev.v7i2.56748

INTRODUCTION

The swift and deep evolution of artificial intelligence is fundamentally transforming the techniques utilized in criminal investigations, specifically with the increased application of predictive analytics supported by facial recognition technologies. However, the contention that such emerging technologies lead to what has emerged as 'amplification bias' is still well within the realm of theory and needs definitive verification through stringent, comparative data that are gleaned from several studies or a variety of regional contexts. Predictive policing algorithms (PPAs) algorithmically process enormous databases of criminal data to predict possible criminal activities, such as identifying high-risk locations and persons (Elegbe and Ladoja 2025). Similarly, facial recognition technology (FRT) scans and processes facial images of persons to enable their identification. Police departments worldwide are adopting these technologies to compensate for manpower shortages and manage surging digital evidence (cell phone records, social media, CCTV). Proponents envision that AI can render policing more proactive and effective, but scholars caution that such technologies usher in serious legal and ethical challenges. Studies have shown that predictive policing routinely perpetuates existing biases; for example, risk profiles based on racially disproportionate arrest data and surveillance enabled by facial recognition technology have been shown to disproportionately target minority communities (Manisha, n.d.).

Government reports provide objective evidence that demonstrates surveillance patterns tend to mirror the existing biases within society, noting that facial recognition technologies have the potential to 'enable more targeted discrimination' when used in the context of policing practices. This is concerning because it arises from the reality that automated facial matching capabilities will disproportionately fail to accurately identify members of marginalized populations, thereby posing significant issues with identification accuracy. Further, location-based surveillance technologies can be leveraged to replicate and amplify already existing patterns of over-policing already present in some neighborhoods, which serves to further complicate the way policing occurs in those neighborhoods. Predictive arrest decisions that are made, therefore, can inadvertently exacerbate the disparities that are already inherent in the system. These critiques present grave concerns about equity, openness, and civil rights under AI policing (Konatam, Naga, and Konatam 2024).

Ḥudūd Offences in Nigeria and Indonesia. Muslim-majority courts, AI policing, and Islamic criminal law. Shariʿah criminal courts apply hudud sanctions like amputation for theft and death by stoning for sex outside marriage within Nigeria's twelve northern states (and the Federal Capital), even if in practice these extreme sanctions are hardly applied. All death penalties issued under the Shariʿah code since 2000 were (H Bourbeau, MS Umar 2019), for example, overturned on appeal. More recently, a Bauchi State Shariʿah court (2022) issued a sentence of death by stoning for homosexuality, a decision pending review. On the other hand, taʿzīr punishments (flogging/caning for moral offenses) are common. Notably, Zamfara State did make its final amputation in 2016, although caning and flogging "have been very common" (Tertsakian 2004). Dozens of lashes are habitually given for theft, drinking alcohol, and sexual immorality. In Indonesia, only in the province of Aceh is there an Islamic criminal code.

In Indonesia's only province that implements complete Sharia law, public caning is a living penal practice for the so-called 'victimless' offenses such as khalwat (being alone together for unmarried individuals) and alcohol consumption. Official records, for example, indicate that there were 339 public canings in 2016, the first year that the new Sharia bylaw was enforced, increasing to 530 floggings in

2017 (Andreas Harsono 2017). This type of penalization is typical of the province's hudud-inspired legislation but is highly troubling in terms of human rights, particularly concerning proportionality and due process. Notably, the enforcement and implementation of such punishments may be influenced by the application of artificial intelligence; for example, through AI-enabled surveillance systems that detect perceived moral crimes based on facial recognition or geolocation monitoring, which may be used to entrench entrenched socio-legal biases. The statistics show an active enforcement of ḥudūd-like sanctions in these regions, thus indicating the possibility of a role for artificial intelligence in enforcing them. Islamic Evidentiary Standards.

Classical Sharīʿah enforces extremely strict demands for evidence about hudud crimes. Scholarly literature enumerates five broad classifications of hudud crimes: theft, robbery with violence, drinking alcohol, zina (illegal sexual intercourse), and the crime of false accusation (qadhf) (Grey et al. 2018), which are all offenses against divine boundaries. Convictions must achieve the highest degree of certainty (yaqīn). For instance, the Qur'an and Sunnah stipulate the condition of four credible witnesses or a confession to establish a conviction for zina. In opposition to circumstantial or technological evidence, which is inherently incomplete by nature, recent studies have argued that the utilization of CCTV images or DNA as proof of adultery "will undermine and invalidate the Qur'anic requirement of four credible eyewitnesses before punishment" (Ṣaḥīḥ al-Bukhārī 6828). In effect, this argues that doubt necessarily favors the accused; Islamic legal sources stress that evidence that is less than certain is not enough to warrant a hudud punishment (Ibn Qudāmah, *al-Mughnī* 12:29). Furthermore, evidence given by women or non-Muslims will be given less weight in hudud cases. Overall, Sharīʿah rules of evidence are made onerous to avoid false convictions of hudud.

The Acehnese Sharia system, under hudud principles, demands high levels of evidence for criminal acts, such as the necessity of four male witness testimonies for a case of adultery (zina). Such a doctrinal position establishes an enormous tension with the utilization of AI-generated evidence, as a facial recognition match or algorithmic analysis of moral danger does not meet the Qur'anic criterion of acceptable testimony, and neither is an automated match a voluntary confession. This raises pressing questions for Aceh's courts: can algorithmic proof ever suffice to satisfy Sharia's procedural safeguards? Would biometric data, video surveillance, or location-based AI tracking constitute acceptable evidence under current qanun?

Technologists and jurists in the Islamic tradition have started to address these issues, (Elmahjub 2023a) Contends that artificial intelligence usage must be put in the framework of the maṣlaḥa principle (common good) and adherence to divine law, i.e., AI usage must only be for promoting the common good within well-defined religious boundaries. With that said, to date, Aceh's qanun and prevailing local judicial practice have a significant lack of explicit provisions on incorporating AI-driven tools without compromising fundamental evidentiary principles. This doctrinal gap poses a fundamental research question: how is the province to reconcile modern digital policing with the stringent demands of Islamic proof, especially in hudud crimes where the standards of proof are non-negotiable? Unless otherwise addressed, the growing enthusiasm for AI surveillance threatens global alignment with Aceh's traditional bulwarks, potentially undermining legal certainty and community trust in Sharia enforcement.

Our literature brings together two bodies of converging scholarship. Whereas among the fast-growing body of research on policing and AI, researchers have mostly focused on issues of algorithmic fairness, bias mitigation, and accountability in the use of predictive policing, risk scoring, and biometric surveillance technologies, research in this field shows how automated decision-making can reflect or entrench discriminatory biases built into systems and present challenges to due process, it tends to

consider these issues in secular legal systems (Hung and Yen 2023). For example, show how predictive policing algorithms will replicate racial biases in arrest data. Human rights reports also detail abuses of FRT(Almeida, Shmarko, and Lomas 2022): trust organizations report that implementations of FRT are typically opaque, with potential for discrimination. Empirical studies (e.g., reports of city inspector generals) repeatedly highlight minorities as being disproportionately targeted by law-enforcement surveillance (Caitlin Chin-Rothmann 2022). AI-forensics literature similarly highlights how machine learning can sift through enormous amounts of digital evidence at an affordable price, albeit with some qualification about potential chain-of-custody and privacy problems. Such studies highlight the crime-control promise of AI and the need for responsible regulation.

In contrast, scholarship in Islamic criminal law has concentrated on the jurisprudence of hudud. Classical fiqh texts and modern scholarly studies delineate the offenses that have been legislated and their penalties, along with procedural regulations on the fitness of witnesses and punishment for false accusation. Current studies of Nigeria and Aceh discuss the implementation of hudud laws, with particular attention to societal reactions and court practice. Yet this literature hardly discusses the influence of modern technology. An exception is Abikan (2023), who argues that CCTV and DNA cannot be permitted to establish zina since they contravene the Quranic witness requirement. His ruling – that Quran/Sunnah-governed evidence (four witnesses or confession) only can establish adultery is a paradigm statement of traditional doctrine. Aside from these isolated statements, there is no sustained consideration of the inclusion of AI-generated evidence in Islamic courts. No policy or framework currently exists that aligns predictive analytics or facial recognition with Sharīʿah evidentiary rules, especially in locations like Northern Nigeria and Aceh, where Sharīʿah-based criminal justice and modern surveillance are now juxtaposed.

This study offers a Sharīʿah-compliant framework for the ethical application of AI in the investigation of ḥudūd offenses. Its significance is demonstrating how emerging technologies can be aligned with Islamic law's higher objectives (maqāṣid), particularly the doctrine of maṣlaḥa (public interest) and the strict rules of evidence that safeguard due process in Islamic legal theory. By placing this analysis within the field of technology law, the research also enables ongoing advocacy of a normative strategy connecting current discussions on the regulation of AI to the knowledge-based foundations of Islamic criminal justice. Using this holistic perspective, the framework provides practical guidance to ensure that artificial intelligence tools, such as predictive analytics or facial recognition systems, do not undermine the procedural justice mandated by Sharīʿah. By doing so, it attempts to fill a particular void: although the field of AI ethics hardly ever takes religious legal dictates into account, and Islamic law scholarship has not thoroughly examined the implications of AI-driven law enforcement, no such policy exists that bridges these spheres especially in regions such as Northern Nigeria and Aceh, where both exist side by side.

METHOD

This research utilizes the legal normative doctrinal method in critically analyzing primary and secondary sources to develop a model of AI-enhanced ḥudūd investigations that meet Sharīʿah standards, taking into consideration relevant legal norms and policy directives. Doctrinal scholarship continues to be the preferred method of gaining legal rules and their interpretive norms since it systematically seeks to excavate, examine, interpret, and test latent legal doctrine; this establishes a boundary between legal writing and socio-legal matters in a bid to clarify the law according to its internal standards. We conducted library-based doctrinal analysis based on (1) criminal procedure, evidence, and AI regulation statutory and regulatory materials (e.g., Nigeria Data Protection Act 2023; Indonesia Personal Data Protection Law 2022) from local law databases, (2) government and

intergovernmental documents (e.g., UNODC Guidelines on AI in Law Enforcement) to derive best practices emerging, and (3) AI ethics and fiqh scholarship from academic research. Documents were coded and categorized by subject category (ḥudūd evidentiary rules, AI policy requirements, procedural protections), and government documents and reports were scanned for AI-specific requirements and current governance matters.

Classical Sharīʿah sources (Qurʾān, ḥadīth, uṣūl al-fiqh manuals) were expounded upon through ijtihād and maqāṣid al-Sharīʿah methodologies to identify goals of justice (ʿadl) and public interest (maṣlaḥa) that can be the foundation for our normative synthesis. There was also a comparison made that involved pitting the needs for evidence in Islam, the four-witness zina rule, against current processes of available technology that are dominant, that is, predictive analytics and facial recognition, in order to find friction points. Validity and reliability were achieved through statutory and fiqh text outcomes triangulated with canonical commentaries and cross-checked policy outcomes in reports with AI ethics studies published in peer-reviewed journals to avoid single-source bias and guarantee doctrinal integrity. This approach, though technologically focused and legally valid in compliance with prevailing doctrinal requirements by the enforcement of rigorous techniques in document examination, presents a model for the use of artificial intelligence in the area of ḥudūd questions in Sharīʿah law jurisdiction.

RESULT AND DISCUSSION

1. *The Incompatibility of AI-Generated Evidence (Predictive Policing, Facial Recognition) with Classical Sharīʿah Evidentiary Standards in Ḥudūd Adjudication*

Classical Sharīʿah evidence rules demand extremely stringent conditions for the determination of ḥudūd offenses, which artificial intelligence–generated evidence cannot satisfy. For example, the Qurʾān specifically requires four upright, adult witnesses to the criminal act of zina (adultery) (International Crisis Group 2006). Aceh's Islamic regional law on ḥudūd is similarly: 100 lashes for voluntary extra-marital sex (ṣariḥ zina), but only after four adult witnesses have proved the act "in the absence of other proof"(Ibid.) This aligns with Qurʾānic verse 24:2 (Ibnu Kathir 2018) and early Sunnah (e.g., the Prophet requiring four witnesses or confession). In contrast, CCTV cameras, facial-recognition software, and predictive-risk scores based on data analysis provide only circumstantial or probabilistic evidence. These technologies do not record the criminalized act itself and the criminal intent (niyyah) of the perpetrator, but instead provide qarīnah (circumstantial evidence). As one recent survey concludes, new forensic or digital evidence (DNA, CCTV, biometrics) may be considered qarīnah within Islamic law, but "technology-based evidence falls short of the strict standard of evidence necessary to prove ḥudūd crimes" (Korbatieh 2020). That is to say, AI output may illuminate an inquiry, but it can't supplant the Qurʾānic standard of firm proof (ḥujjah muqayyinah) (Abdulkarim 2008).

The fundamental reason is that Sharīʿah ḥudūd punishments are to be applied only when doubt is entirely removed. The Prophet Muḥammad instructed to “drop the ḥudūd in all cases of doubt” (iḍrā al-ḥudūd bi’shubhāt) (bin Muhamad et al. 2015). In practice, this means that any suspicion or uncertain inference bars a ḥudūd conviction. An FBI study cited in recent scholarship has shown that facial-recognition systems often misidentify persons of color (Kadry and Abdel 2024). In Britain, police audits concluded that facial-recognition trials were too unstable to submit to a trial. To make them so would create exactly the type of reasonable doubt Islamic jurists detest. The Prophet himself, as Munzil Mohd in his analysis notes, withheld ḥudūd in cases of suspicion. Indeed, even if CCTV captured two people embracing, it would not prove the actual consummation of adultery before witnesses; without direct observation of the act, any judgment would rest on conjecture (qāṭiʿ li’l-ẓann faqaṭ). According to

eminent jurists, only the most "strong and unmistakable qarīnah can be admissible for taʿzīr punishments, and not for ḥudūd. In aggregate, an AI profile forecast of likely suspects or a biometric match of a photograph image can be evidentiary tips, but they fall short of yaqīn (infallible certainty) needed to establish ḥudūd. A technical doubt or bias factor accordingly makes a case of hudūd inoperative (Kamali 2019).

Judicial precedent amply supports this contention. Nigerian Islamic legal scholars have discussed the permissibility of admitting DNA testing and CCTV footage as evidence in cases of zina. Abikan (2023) asserts that punishment for ḥadd offenses may not be based on this kind of evidence, as its admission would violate the Qur'anic stipulation for four trustworthy witnesses. (Abikan 2023) The argument acknowledges the conflict between recent technology and the centuries-old values of Islamic legal tradition. Scholars continue to argue over the consequences of introducing modern evidence into force in traditional religious structures, attempting to balance fidelity to sacred texts with requirements of modern legal systems. Regardless, Abikan knows that scholars can only enforce strict regulations on non-hudūd (taʿzīr) offenses. Briefly, although closed-circuit television (CCTV) may capture two people committing an indecent act, it remains shubuhat (doubt) under the Sharīʿah paradigm since there are no human witnesses to attest to the occurrence of the act. What are the present serious challenges to the application and understanding of mainstream Islamic evidentiary standards in the contemporary legal environment due to their basis on tangible evidence like CCTV footage?

Similarly, scholars must navigate the intricacy of pre-existing legal frameworks alongside contemporary technological paradigms amidst the backdrop of religious imperatives. For example, video testimony is not able to substitute the Islamic requirement in Aceh of four witnesses or a definitive confession. Thus, the Aceh courts have had no choice but to use direct witness testimony; therefore, punishment can be delayed or substituted with a form of denial under oath, where the accused individuals profess their innocence in the face of accusations leveled against them, and the quantity of witnesses needed is not four (International Crisis Group). This method recognizes the challenge of legal systems to balance traditional religious doctrines with modern demands of evidentiary proof. In modernizing societies, the dialogue between development and tradition needs to be equitable to strongly held beliefs. One scholar believes that the latest advances in technology "are rightly classified as circumstantial evidence, and not conclusive evidence," and therefore cannot be employed "to establish ḥudūd crimes"(Korbatieh Ibid). This opinion is particularly relevant in the cases of adultery or rape, which are designated as crimes punishable by death under the legal traditions of the Ḥanafī and Shāfiʿī schools.

The objective of Sharīʿah in this case is not to punish based on incomplete evidence only, but to prevent evil activities and guard the welfare of the society. The social precedence principle is the reason for the demand for a high level of proof to prevent punishing individuals unjustly based on misleading evidence. In effect, the Sharīʿah instructions aim for a balance between the harmony of leniency and justice, trying to establish a society that upholds the dignity and rights of everyone. A system that relies on evidence gathered through methods such as CCTV, biometrics, or computational investigation would effectively contravene the very spirit of ḥudūd, as it provides for the possibility of unjust sanctions or unwarranted intrusions. The Acehnese criminal justice system successfully translates these theories into practice. The case is in Aceh's draft amendment to the law on khalwat (unlawful sex) (Afrianty 2016), which distinctly states that when a case of zina involves a hudūd offense, "traditional Islamic jurisprudence demands four adult witnesses to the act in the absence of corroborative evidence" (Tamarsah, Faisal, and Hamdani 2022). Other than that, the draft provides a lower penalty if a spouse testifies upon condition that there is no evidence. In this context, it is worth mentioning that, even

though there is the inclusion of technology in the Acehnese Sharia court system, it does not substitute the requirement for eyewitnesses.

On the other hand, a CCTV photo of a husband and wife in a closed indoor environment may serve as taʿzīr evidence to reinforce charges of khalwat (intimacy); however, such evidence would not be acceptable in the aforementioned hadd cases where the problem is illicit carnal knowledge. This early precedent is upheld throughout Sharīʿah literature: prophetic or biometric evidence can be a qarīnah to initiate an investigation; however, in cases of ongoing suspicion, "ḥudūd punishments are not to be applied." Disputes are most likely to arise from artificial intelligence-based evidentiary practices. Humans cannot traverse the threshold of yaqīn and remain within the domain of doubt in Sharīʿah jurisprudence and thus cannot be ḥudūd. While they may expedite leads or even be admissible in taʿzīr cases, as Abikan asserted, a hudūd conviction cannot be established based on CCTV images, biometric data, or black-box calculations by themselves.

2. *Maqāṣid al-Sharīʿah as a Bridge: Reconciling AI Tools with Islamic Legal Ethics through Justice (ʿAdl) and Public Welfare (Maṣlaḥa)*

At the same time, classical evidence rules are not the only Islamic matter. Islamic jurisprudence also has regard for moral and social goals (maqāṣid al-Sharīʿah), which can equate to how technology must be implemented. Sharīʿah's more general goals are the safeguarding of religion, life, intellect, family, and property, and above all the values of justice (ʿadl) and common good (maṣlaḥa). Discussing these terms about AI makes for an enlightened implementation. The AI-facilitated inquiry, e.g., may be directed to the attainment of maṣlaḥa through greater public security and deterrence of criminality. Invasive or discriminatory AI does not pay attention to ʿadl and other maqāṣid like safeguarding human dignity. Islamic ethics research is said to report that "65% of AI systems worldwide have high biases… disproportionately affecting marginalized groups." PR. From the Islamic perspective, this infringes on concepts of justice (al-ʿadl) and common good (al-maṣlaḥa)" (Budiman, Wijaya, and Rizkillah 2024). Islamic ethics, therefore, demand conformity between austere justice and the common good.

Technologically, ʿadl (justice) demands that technology not unjustly harm the innocent or discriminate. Islamic principles of justice favor equality, equity, and protection of the weak. A prejudiced AI system would thus violate this directly (Hayat and Ahmed 2024). For instance, if face recognition software misidentifies certain groups as other groups when they are not, an innocent person would be unnecessarily suspected. Islamic jurisprudence would regard this as a heinous injustice. Shariʿah demands regulation even in criminal law for the protection of individual rights and dignity, evident in Qurʾān and Sunnah. The maxim hifz al-ʿirdh (preservation of honor) is commonly used in maqāṣid as the basis for privacy and personal security. In a similar context, honesty and transparency of judgment were recommended by the Prophet. Any deficiency in explainability, responsibility, or scope for abuse of AI is violative of these norms.

As Elmahjub (2023) narrates, strict Islamic AI ethics have to include justice, transparency, and privacy as cherished norms, with "bias, opacity, and privacy violation" being objectionable on moral grounds. In the meantime, maṣlaḥaḥ (public benefit or common good) can be presented as the grounds for wise action in the usage of AI. Sharīʿah-obedient pre-modern jurists granted flexibility in acts and undertakings being sought in aid of society, but only provided that this does not the crossing of sharīʿah obligations. For instance, COVID healthcare policy involved intermittent deployment of digital forms of surveillance utilizing maslaha without overstepping sharīʿah boundaries. Similarly, it can be argued that CCTV or predictive policing safeguards property and life (also maqāṣid) by preventing theft or violence. Maṣlaḥa in Sharīʿah is also, nevertheless, subject to some definite legal texts; it cannot violate

express prohibitions or absolute rights. In the present situation, while public interest requires the apprehension of criminals, the highest principle of ʿadl and compliance with textual evidence impose limitations (SULAIMAN LEBBE 2021). Islamic ethics thus suggests a middle path: employ AI for amr bi'l-maʿrūf (spreading goodness), yet with constraints that guarantee justice. Scholars like the Indonesian conference paper on tawḥīd ethics propose AI policies that "prioritize Islamic values such as al-ʿadl… and al-maṣlaḥa" (Murphy 2019). That is, an Islamic framework for evaluation would demand that any societal benefit introduced by AI never be at the cost of violating equality or privacy.

This is a broader conflict between duty and utility. Elmahjub (2023) contrasts the two potential significations of maṣlaḥa in Islamic thought: one "welfarist/utility-based" and one "duty-based." His thesis is that Islamic law represents both maximizing total good and, on the other hand, rejecting consequences-only thinking. Applied to the domain of criminal technology, this remark implies that artificial intelligence can be put to the general good; yet this must not be at the expense of such elementary principles as fairness and human dignity. For instance, while a facial-recognition database could be a terror deterrent, a manifest maṣlaḥa, it becomes categorically impermissible (maṣlaḥa mudāriʿa) if it is employed to facilitate illegal surveillance or racial profiling (Brennan 2021). Contemporary Muslim AI ethics scholarship confirms this thread: A biased AI program against individuals or an invasion of personal privacy is against sharīʿah goals (Brennan 2021).

The risk of abuse also balances. Islamic governance entails responsibility (hisbah) and protection from oppression. Unregulated algorithms may entrench powerful biases or enable authoritarianism. (Bhikha, Sina, and Africa 2021) As an illustration, in non-Islamic contexts, social justice activists have shown that predictive policing can become biased against poor or racial minorities. Under Sharīʿah ethics, such outcomes would amount to a breach of ʿadl and ḥifẓ al-nafs (life and safety) for unjust ends. Maqasid-based analysis, therefore, advocates stringent precautions. All uses of AI must be transparent and contestable.

The concept of amanah (trust) implies that legal powers must handle data with dignity, and in case an AI system strays, humans remain responsible (Hashim and Sajid 2024). In general, Islamic ethical standards do not strictly forbid innovation, but they place strict limits. One recent paper advances an "inclusive" Islamic AI model that is privacy-respecting and just, insisting that "technology is used fairly and does not harm disadvantaged groups." In the case of AI-facilitated probes, a Sharīʿah approach asks: Does this enhance maqāṣid to the detriment of ʿadl? Only if the answer is yes and only under strict controls can partial toleration be considered. The outcome is that Islamic moral frameworks (maqasid and Sunnah teachings) could, in theory, allow some AI tools if they enhance communal welfare without compromising justice (Abadalhady et al. 2025).

However, the balance is precarious. For example, using AI to analyze crime patterns could be a maṣlaḥa if demonstrated to be fair and privacy-protecting, but even then, Sharīʿah would demand protecting individual rights (Elmahjub 2023b). Elmahjub's pluralistic approach suggests combining both utility and deontological views: an AI policy that is aligned with the "good" (maṣlaḥa bi'l-maʿrūf) as understood in Islam but not at the expense of core duties (such as fairness and privacy). In practice, this points toward solutions like robust regulatory oversight and ethical audits of algorithmic measures that align with maqāṣid (accountability, preventing harm) while still seeking public safety benefits. Briefly, Islamic ethics gives us conceptual instruments ('adl, maṣlaḥa, amanah, hifz al-nafs, etc.) to critically evaluate AI. And thus, the likely verdict is: well-employed AI can usher in maslaha, but only if it possesses the capacity to satisfy the ever-tightening standards of ʿadl. Any halfway integration of AI into Shariʿah-criminal procedure, then, must be placed within an ethical protection, not a blank cheque (Raquib et al. 2022).

3. Toward a Sharīʿah-Compliant AI Framework: Synthesizing Fiqh Doctrines with Modern Data Protection Norms in Ḥudūd Investigations

Based on the above analysis, we propose a doctrinally grounded model of Sharīʿah-compliant AI-assisted hudūd investigations. Our model makes AI tools auxiliary aids to traditional proof and renders procedural guarantees contingent upon Qurʾānic and Prophetic standards. Operationally, the model can be sketched out as follows: First, restricted role of AI evidence. AI-generated results (e.g., face match or high-risk categorization) are at best qarīnah (circumstantial evidence). They can initiate an investigation, but cannot independently determine guilt. The suspects must still be questioned through human evidence or witness testimony. If it is a ḥudūd crime, confession or the Sharīʿah number of witnesses is still required. If, for example, CCTV or biometric testing provides a suspect for theft, the judge would utilize this as a lead to follow up on witnesses or confession, but the hadd punishment (amputation for theft) would only be implemented if an actual confession (penitent and repeated) or two reliable witnesses who observed the theft are produced. By the "two-tier approach" of modern scholars, DNA or CCTV can be taʿzīr (discretionary) and not ḥadd (Baharuddin et al. 2021).

Second, the evidentiary corroboration. Whenever AI-generated evidence is presented, it must be corroborated by independent means. For example, if facial-recognition software is used, there must be at least two independent streams of support: maybe one witness confirms that the defendant was there, or an unrelated fingerprint is matched with an item seized. Like the requirement of multiple witnesses, the court can require multiple independent algorithms or sensors arriving at the same conclusion before giving weight to the AI output. This is an extension of the old rule of multiple witnesses – here, two different technical methods can take the place of two witnesses. If only one camera or algorithm is available, the output is considered very weak evidence and triggers the idrāʾ al-ḥudūd bi'l-shubuhāt maxim: any remaining doubt excludes hadd. In practice, the judge would examine the AI process: Was the camera angle clear? Was the algorithm error rate validated? If not, the evidence might be excluded on the spot as unreliable. Overall, the model is for AI clues to require "confirmation" through corroborating evidence, just as classical jurists consistently refused to accept qarīnah unless it on its own indicated certain knowledge (Kleider-Offutt et al. 2024). Third, judicial oversight and discretion. Judges must actively manage AI use, treating it as expert testimony. Judges retain ultimate discretion to admit or bar AI evidence. Any AI-derived claim is part of the prosecution's burden of proof. The court may, for instance, order an audit of the algorithm by an independent party or a live demonstration in open court. Where proprietary software is a "black box", the judge may require source-code review or testimony of the makers under oath as to reliability.

Sharīʿah maxims guide judges: "If the ḥudūd is not established beyond doubt, it is dropped." This implies that if the judge is in any doubt about the integrity of the AI output or its legal chain-of-custody, the had punishment must be dismissed. For example, if a risk score mistakenly includes evidence gathered without a procedure, the judge must exclude it to prevent wrongful punishment (Lidbetter 2025). This keeps shubha (doubt) in the defendant's favor. In the meantime, AI outputs can be considered by judges as one factor among many a parallel of iʿtirār (considering motives/circumstances) in Islamic forensics. In all cases, the human decision-maker cannot abdicate responsibility (Javed and Li 2025). Fourth, Procedural Safeguards and Data Rights: Any AI-supported investigation platform must have total compliance with relevant data-protection law and constitutional rights (Chioma 2025). Nigeria's new Data Protection Act (Government 2023) and Indonesia's Personal Data Protection Law(Govt. 2022) provide important guardrails (PwC Indonesia 2022).

The Nigerian DPA, for instance, requires Data Protection Impact Assessments for high-risk processing and stipulates fair, lawful processing of personal data in our scenario, policing agencies

would be required to meet the following conditions: a facial-recognition database must undergo DPIA before it can be used, and officers must be trained and monitored under the supervision of a Data Protection Officer (as per Sections 25–27 of the Nigerian DPA) (OBIANUJU LUCY. 2025). Similarly, Indonesia's PDPL expressly includes "automated decision-making having a legal effect on a significant impact on a data subject" as deserving special oversight. This would mean that AI adjudication of criminal guilt is per se high-risk, and the accused has the right to object and demand revelation of the decision algorithm. Such domestic legislation is in harmony with Sharīʿah values of privacy (sirr), trust (amānah), and transparency. By enforcing them, our model ensures that AI tools operate under accountability – for example, every biometric scan or algorithmic alert would generate a log accessible to the defense.

Fifth, preservation of shubha (Doubt). The model enshrines the classical rule "idrā al-ḥudūd bi'l-shubuhāt" ("repel hudud by doubt") as a principle of criminal procedure. Any doubt, however slight, introduced by imperfect technology triggers this rule. If, for instance, CCTV is unclear, or the AI is only 70% sure, then full hand cannot proceed. The court may apply discretionary punishment (taʿzīr) if warranted, or release the accused. This doctrinal strategy is consistent with the wider maqāṣid al-sharīʿah tradition. As al-Shāṭibī discusses in al-Muwāfaqāt, the final intention of the law is to safeguard human welfare and avoid harm. Ibn al-Qayyim goes on to underline in Iʿlām al-Muwaqqiʿīn that the Sharīʿah's spirit is justice, mercy, and wisdom, and any speculative or dubious evidence threatening life (ḥifẓ al-nafs) or dignity (ḥifẓ al-ʿirdh) should be discarded to ensure these higher objectives are fulfilled. In this way, inserting iḍrāʾ al-ḥudūd bi'l-shubuhāt as a precaution for AI-derived evidence guarantees that technological advances do not dislodge the classical ethical imperative to safeguard life and reputation in the absence of certainty. For instance, if a biometrics match is inconclusive, the suspect may be placed on probation or assessed minor fines rather than hudud. In effect, AI evidence is presumed "doubtful" unless extremely strong. This teaching is not abstract: it is grounded in Prophetic practice. For example, the Prophet Muhammad did not punish an adulterer even when circumstantial evidence indicated guilt, since there was no definitive proof. Our template does the same: AI-generated circumstantial proofs must be cross-checked by human criteria or else mercy (raḥmah) and caution prevail.

Sixth, sharīʿah procedure integration. To enable integration, there could be specific rules of procedure that could be legislated under Islamic criminal procedure law. For example, legislation along the lines of Aceh's Qanun No. 11 could require any evidence produced by AI to be disclosed to the accused with enough time to challenge it. Courts could establish an expert committee consisting of Islamic legal specialists and technologists to investigate contentious cases. Interestingly, the model does not propose rewriting Qurʾānic law, but the inclusion of AI within existing evidentiary categories: as qarīnah in hudud cases, or as full bayyinah (proof) only in non-hudud cases if the accused concurs. Practically, a statute following this model would stipulate that "no ḥadd conviction shall be based exclusively on evidence produced by algorithmic processes," while explicitly permitting such evidence in investigation reports and taʿzīr trials at the discretion of the courts and subject to defendant rights.

This model thus balances tradition and innovation. It builds on Abikan's proposal that CCTV/DNA evidence be restricted to taʿzīr crimes by explaining exactly how the handoff between investigative leads and adjudication must occur. It also operationalizes the moral norms proposed by Elmahjub (2023) by putting maṣlaḥa and ʿadl into concrete rules: for instance, mandating that AI systems must be certified as being fair before they can legally be deployed (manifesting ʿadl), and that any application demonstrably serving the public good must be logged (manifesting maṣlaḥa). Our contribution relative to prior work is in consolidating these elements into a procedural model. Abikan

(2023) and Korbatieh (2020) have shown that modern forensic evidence is circumstantial and typically inadmissible for hudud. We agree with their conclusion but take an additional step by suggesting how such evidence could be employed safely in practice. Elmahjub (2023) presents a comprehensive ethical theory, and our model moves to the next level: incorporating that theory into a judicial process. By invoking national laws of data protection, our model also acknowledges and employs contemporary legal mechanisms to supplement Sharīʿah's emphasis on justice and dignity. In total, the proposed Sharīʿah-compliant AI investigative framework requires strict human oversight and verification. AI can advise law enforcement, but it cannot supplant the Qurʾānic system of evidence. Any tool that generates "the slightest doubt" calls upon the protection of mercy. Paired with modern data protections and ethical governance, this approach seeks to harness technological superiority without abandoning Islamic criminal theory. It demonstrates how, within the parameters of maqāṣid al-Sharīʿah, the pursuit of public advantage using AI can be reconciled with an uncompromising commitment to justice and individual rights.

CONCLUSION

This research has mapped the intricate nexus between Islamic criminal law, namely, evidentiary requirements for ḥudūd crimes, and the growing role of artificial intelligence in contemporary policing. Based on a normative doctrinal approach rooted in Qurʾānic prescriptions, Sunnah, classical juristic consensus, and the maqāṣid al-Sharīʿah paradigm, the article has established that machine-generating evidence, either through predictive policing software or facial recognition systems, is incapable of substituting the strict requirements of proof under Sharīʿah. Instead, such technologies might play a subsidiary limited function: initiating investigations, corroborating taʿzīr offenses, or admitting circumstantial qarīnah when there is no doubt, but never forming independent conclusive evidence for hudūd penalties. The model herein proposed ensures such doctrinal consistency in requiring corroboration, judicial oversight, procedural safeguards, and strict adherence to modern data protection standards such as Nigeria's Data Protection Act (2023) and Indonesia's PDPL (2022).

Notably, it resurrects the classical doctrine of iḍrāʾ al-ḥudūd bi'l-shubuhāt, guaranteeing that any doubt, and especially that created by algorithmic prediction or probabilistic biometrics, immediately excludes the application of the most severe punishments. Grounding AI policing in the twin maqāṣid of ḥifẓ al-nafs (protection of life) and ḥifẓ al-ʿirdh (protection of dignity) roots technological innovation in Islam's loftiest goals of justice (ʿadl) and the common good (maṣlaḥa). The article consequently contributes not merely to theoretical integration but also to a practical policy model for Muslim-majority states such as Aceh and Northern Nigeria, where Shariʿah-inspired penal codes coexist alongside contemporary surveillance technologies. It emphasizes that technological efficiency cannot be at the expense of sacred guarantees and human dignity in Islamic legal tradition.

Future research should expand this doctrinal-policy interface through the formulation of explicit statutory foundations for the procedural accommodation of AI within Sharīʿah courts, making further comparative Islamic and secular norms of evidence for digital evidence, and facilitating cross-disciplinary dialogue between technologists, jurists, and policymakers. In this way, Muslim societies can harness technological tools without being unfaithful to the foundational precepts that secure justice, mercy, and the protection of fundamental rights for all.

REFERENCES

Abadalhady, Wafa, Hawraa Ibrahim Jasim, Sarah Kadem Abdulreda, and Israa Saad Khaled. 2025. "Artificial Intelligence from an Islamic Perspective: Communication Applications as an Example BT - Intelligent Systems, Blockchain, and Communication Technologies." In, edited by Ahmed Abdelgawad, Akhtar Jamil, and Alaa Ali Hameed, 157–66. Cham: Springer Nature Switzerland.

Abdulkarim, Shamim Ahmad bn. 2008. "The Islamic Call's Approach to Responding to Doubts: A Methodological and Fundamental Study." Imam muhammad bin Saud Islamic University.

Abikan, Yahaya Ibrahim. 2023. "Examining the Admissibility or Otherwise of Evidence Generated from Closed-Circuit Television (CCTV) and Deoxyribonucleic Acid (DNA) Test as Means of Proof of Zina Under Islamic Law." *Al-Manahij: Jurnal Kajian Hukum Islam* 17 (1): 83–96. https://doi.org/10.24090/mnh.v17i1.8172.

al-Shāṭibī, Abū Isḥāq Ibrāhīm ibn Mūsā. *al-Muwāfaqāt fī Uṣūl al-Sharīʿah*. Edited by Abdallah Diraz. Cairo: Dār al-Kutub al-'Ilmiyya, 1997

Afrianty, Dina. 2016. "Qanun of Aceh, No. 14 of 2003 on Khalwat (Close Proximity)." Islamiclawblog. 2016. https://islamiclaw.blog/2016/11/27/commentary-qanun-of-aceh-no-14-of-2003-on-khalwat-close-proximity/.

Almeida, Denise, Konstantin Shmarko, and Elizabeth Lomas. 2022. "The Ethics of Facial Recognition Technologies, Surveillance, and Accountability in an Age of Artificial Intelligence: A Comparative Analysis of US, EU, and UK Regulatory Frameworks." *AI and Ethics* 2 (3): 377–87. https://doi.org/10.1007/s43681-021-00077-w.

ANIGBOGU, OBIANUJU LUCY. 2025. "APPRAISAL OF THE LEGAL FRAMEWORK ON DATA PROTECTION IN NIGERIA AND ITS IMPLICATION FOR RIGHT TO PRIVACY." AFE BABALOLA UNIVERSITY, ADO-EKITI, EKITI STATE.

Baharuddin, Syukran, Lukman Abdul Mutalib, Wan Abdul, Fattah Wan, Muhammad Hazim Ahmad, Lutfullah Saqib, and Universiti Sains. 2021. "Systematic Literature Review of Forensic Science and Al-Qarinah in Prominent Shariah Literature." In *INSLA E-PROCEEDINGS*, 4:67 73.

Bhikha, Prof Rashid, Ibn Sina, and South Africa. 2021. "The Hisbah Principle in Islam." *International Journal of Innovation, Creativity and Change* 15 (10): 835–42.

Bukhārī, M. ibn I. (n.d.). Ṣaḥīḥ al-Bukhārī. https://sunnah.com/bukhari (Original work published 9th century)

Brennan, Mark G. 2021. *Counter-Terrorism, Ethics and Technology: Emerging Challenges at the Frontiers of Counter-Terrorism*. https://www.dropbox.com/s/vl6usadvj25iens/978-3-030-90221-6.pdf?dl=0.

Budiman, Mamdukh, Mirza Mahbub Wijaya, and Rijal Wakhid Rizkillah. 2024. "Artificial Intelligence (AI) in Islam : Building Ethics and Solutions Based on Tawhid," 60–76.

Caitlin Chin-Rothmann, Nicol Turner Lee, and. 2022. "Police Surveillance and Facial Recognition: Why Data Privacy Is Imperative for Communities of Color." American Bar Association's Antitrust Spring Meeting on April 8, 2022, in Washington, D.C. 2022. https://www.brookings.edu/articles/police-surveillance-and-facial-recognition-why-data-privacy-is-an-imperative-for-communities-of-color/#:~:text=From the historical surveillance of, that disproportionately impact marginalized populations.

Chioma, Unini. 2025. "The Extent Of The Application Of The Nigerian Data Protection Act, 2023." https://thenigerialawyer.com/the-extent-of-the-application-of-the-nigerian-data-protection-act-2023/.

Elegbe, Ifeoluwa S, and Oreoluwa Ladoja. 2025. "Artificial Intelligence (AI) And The Criminal Justice System : Examining the Ethical and Social Implications of AI in Policing," no. February.

Elmahjub, Ezieddin. 2023a. "Artificial Intelligence (AI) in Islamic Ethics: Towards Pluralist Ethical Benchmarking for AI." *Philosophy and Technology* 36 (4): 1–24. https://doi.org/10.1007/s13347-023-00668-x.

Elmahjub, Ezieddin 2023b. "'Navigating the Intersections of AI and Islamic Ethics: A Response to Dr. Raquib's Commentary.'" *Philosophy & Technology* 36 (4): 85. https://doi.org/10.1007/s13347-023-00688-7.

Government, Nigerian. 2023. "NIGERIA DATA PROTECTION ACT, 2023." https://lawcarenigeria.com/nigeria-data-protection-act-2023/.

Govt., Indonesian. 2022. "Indonesia Personal Data Protection Law No. 27 Year 2022." https://mplaw.co.id/indonesia-personal-data-protection-law-no-27-year-2022.html.

Grey, Ian, Amraim AlMazrouei, Justin Thomas, and Patrick Randall. 2018. "Forensic Psychology and Islamic Jurisprudence." *Mental Health, Religion and Culture* 21 (1): 20–34. https://doi.org/10.1080/13674676.2018.1437720.

H Bourbeau, MS Umar, P Bauman. 2019. "Shari ' Ah Criminal Law In Northern Nigeria" 1 (12): 2017–19.

Harsono, Andreas. 2017. "Public Floggings in Indonesia Top 500 Sharia Punishment, Including for Same-Sex Relations, Imposed in Aceh." https://www.hrw.org/node/324896/printable/print.

Hashim, Mohammed, and Ali Sajid. 2024. "Islamic Perspectives on Good Governance : A Comprehensive Analysis" 0 (10): 100–104.

Hayat, Muhammad Ahsan, and Shayan Ahmed. 2024. "The Ethical Implications of Artificial Intelligence in Islamic Jurisprudence : A Comparative Analysis with Western Legal Systems," 85–106.

Hung, Tzu Wei, and Chun Ping Yen. 2023. "Predictive Policing and Algorithmic Fairness." *Synthese* 201 (6): 1–29. https://doi.org/10.1007/s11229-023-04189-0.

Ibnu Kathir, Imad ad-Din Abu al-Fida Ismail Ibn Amar. 2018. *Tafsir Al`qur`an Al`Azim*. *Tafseer*. Vol. 10.

International Crisis Group. 2006. "Islamic Law And Criminal Justice In Aceh: Asia Report 31 July 2006," no. July.

Ibn Qudāmah, M. ibn A. (n.d.). Al-Mughnī (Vol. 12). Islamweb. https://www.islamweb.net (Original work composed 12th century).

Ibn al-Qayyim al-Jawziyya. *Iʿlām al-Muwaqqiʿīn ʿan Rabb al-ʿĀlamīn*. Edited by Tāhā ʿAbd al-Raʾūf Saʿd. Beirut: Dār al-Jīl, 1991

Javed, Kashif, and Jianxin Li. 2025. *Bias in Adjudication: Investigating the Impact of Artificial Intelligence, Media, Financial and Legal Institutions in Pursuit of Social Justice*. *PLoS ONE*. Vol. 20. https://doi.org/10.1371/journal.pone.0315270.

Kadry, Dalia, and Ahmed Abdel. 2024. "Justice in the Age of Artificial Intelligence : A Comparative Study of the Legal Framework for Forensic Evidence in Saudi Arabia and Global Practices" 6798:8043 53.

Kleider-Offutt, Heather, Beth Stevens, Laura Mickes, and Stewart Boogert. 2024. "Application of Artificial Intelligence to Eyewitness Identification." *Cognitive Research: Principles and Implications* 9 (1). https://doi.org/10.1186/s41235-024-00542-0.

Konatam, Sukanya, Venkata Naga, and Murali Konatam. 2024. "Unveiling Bias : Analyzing Artificial Intelligence and Machine Learning's Impact on Fairness in the Criminal Justice System," 582–87.

Korbatieh, Souha. 2020. "Evidence Laws in Sharia and the Impact of Modern Technology and DNA Testing." *Australian Journal of Islamic Studies* 5 (3): 4–29. https://doi.org/10.55831/ajis.v5i3.303.

Lidbetter, Andrew. 2025. "AI in Public Bodies' Decisions – Public Law Issues, Judicial Review and Addressing Risks." *Herbert Smith Freehill*, no. March.

Manisha. n.d. "LEGAL AND ETHICAL CHALLENGES OF AI IN LAW ENFORCEMENT AND SURVEILLANCE." *IJLLR Journal Mar 12* VII (I): 3567–85.

Muhamad, Mohd Munzil bin, Ahmad Azam Mohd Shariff, Ramalinggam Rajamanickam, Mazupi Abdul Rahman, Anowar Zahid, and Noorfajri Ismail. 2015. "Qarinah: Admissibility of Circumstantial Evidence in Hudud and Qisas Cases." *Mediterranean Journal of Social Sciences* 6 (2): 141–50. https://doi.org/10.5901/mjss.2015.v6n2p141.

Murphy, Brendon. 2019. "Islamic Normative Ethics in the Public Sphere: Maṣlaḥa and the Search for an Overlapping Consensus." *Australasian Journal of Legal Philosophy* 44:54 99.

PwC Indonesia. 2022. "PwC Indonesia Legal Alert / January 2023 / No.13" 6 (14): 1–6.

Raquib, Amana, Bilal Channa, Talat Zubair, and Junaid Qadir. 2022. "Islamic Virtue-Based Ethics for Artificial Intelligence." *Discover Artificial Intelligence* 2 (1). https://doi.org/10.1007/s44163-022-00028-2.

SULAIMAN LEBBE, RIFAI. 2021. "THE CONCEPT OF PUBLIC INTEREST IN ISLAMIC LAW (Maslaha) and ITS MODERN IMPLICATIONS." *SSRN Electronic Journal*, 1–14. https://doi.org/10.2139/ssrn.3788222.

Tamarsah, Tamarsah, Faisal Faisal, and Hamdani Hamdani. 2022. "Ketentuan Jarimah Zina Dan Khalwat Menurut Hukum Islam Dan Qanun Aceh Nomor 6 Tahun 2014 Tentang Hukum Jinayat." *Suloh:Jurnal Fakultas Hukum Universitas Malikussaleh* 10 (1): 26. https://doi.org/10.29103/sjp.v10i1.8834.

Tertsakian, C. 2004. "Political Shari'a? Human Rights & Islamic Law in Northern Nigeria." *Human Rights Watch* 16 (9): 113. http://search.ebscohost.com/login.aspx?direct=true&db=i3h&AN=CJA0380040001942s&site=ehost-live&scope=site.