## ACADEMICIA: An International Multidisciplinary Research Journal

ISSN: 2249-7137 Vol. 15 Issue 5, May, 2025 A peer reviewed journal SJIF 2022= 8.252

#### SAFEGUARD WILD: ANTI-POACHING MONITORING SYSTEM USING ML & IOT

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DOI: 10.5958/2249-7137.2025.00030.6

## ABSTRACT

The danger to wildlife due to illegal poaching activities has increased over the past few years, and there is a pressing need for creative solutions to safeguard threatened species. To address this, we propose an Anti-Poaching System Using IoT as an integrated model to track, identify, and deter illegal activities in forest and protected areas. By using networked IoT sensors, the system facilitates real-time identification of human activity, strange noises like gunshot and fire thread. It provides warning messages to forest departments in real time in the form of message ,live video feed and image ,facilitating quick action. This combined solution equips authorities with smart surveillance, automated threat identification, and instant reporting leveraging wildlife conservation efforts and reducing human-wildlife conflict through timely intervention. Our dream is to implement this in national parks and reserves.

**KEYWORDS:** Anti-Poaching, Wildlife Monitoring, Ky-037 Sensor, Flamesensors, Raspberry Pi 3B+, Ultrasonic Sensor, Webcam, Servo Motor Tracking, YOLO Object Detection, Edge Computing, Remote Monitoring, Telegram Alerts.

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#### REFERENCES

ISSN: 2249-7137

1	Lin W et al (2021) "Deen Learning for Autonomous Detection of Descharg in Wildlin	<b>6</b> -
1.	Liu, w. et al. (2021). Deep Learning for Autonomous Detection of Poachers in withing	e
	Reserves Using Drones. IEEE Transactions on Geoscience and Remote Sensin	g
•	<b>DOI:</b> 10.1109/1GRS.2021.3061402	
2.	Kumar, P. et al. (2022)."A Hybrid AI-IoT Framework for Real-Time Poaching Detection i	n
	Protected Areas." Ecological Information	<u>'</u> S
	<b>DOI:</b> 10.1016/j.ecoinf.2022.101763	
3.	Bondi, E. et al. (2019)"PAWS: A Deployed AI System for Anti-Poaching Patro	)l
	Planning." AAAI Conference on Artificial Intelligence	e
	<b>Link:</b> arXiv:1903.01000	
4.	Nguyen, T. et al. (2020)."Smart Collars for Wildlife: IoT and Machine Learning for Ant	i-
	Poaching." Sensors (MDP)	I)
	<b>DOI:</b> 10.3390/s20123456	
5.	World Wildlife Fund (WWF) (2023	).
	"AI and IoT in Wildlife Conservation: Lessons from Smart Parks in Africa.	"
	<b>Report Link:</b> WWF Smart Parks Initiative	
6.	WILDLABS Tech Hub (2022	).
	"The Role of AI and IoT in Combating Wildlife Poaching: A Global Review.	"
	Link: WILDLABS Report	
7	RESOLVE & Intel (2021	)
	"Trail Guard AI: Stopping Poachers with Edge Computing	,, ,,
	<b>Case Study:</b> TrailGuard AI Case Study	
8	Smith I of al (2023	•
0.	"Blockchain-Enabled IoT for Secure Wildlife Monitoring "IFFF World Forum on Io	). T
	DOI. 10 1100/WF_IAT 2023 10102456	1
0	Dot: $10.1107/701.2023.10102430$ Datil D ot al (2022)	`
9.	"Edge AI for Real Time Poacher Detection in Camera Tran Networks" ACM SIGCA	ן. כ
	Luge AI joi Real-Time Toucher Delection in Camera Trup Networks. ACM SIOCA	5
	<b>DOI:</b> 10.1145/1224567.1224569	8
10	<b>S</b> Chewle et al. "Wildlife Desching Detection System using LoT and AL Technologies	,,
10.	S. Chawla et al., Whatije Fouching Delection System using 101 and AI Technologies	, `
	DOL 10 5120/10222	J.
11	DOI: $10.5120/1$ jca2020919883	,,
11.	<b>5.</b> Kamble et al., <i>ToT Based Smart Anti-Poaching System for Forest Surveillance</i>	, 1
	International Journal of Scientific Research in Computer Science, Engineering an	a
1.	Information Technology, 2021.	
12.	Y. Zhang et al., "Deep Learning-Based Animal Detection for Wild Animal Monitorin	g
	Systems", Sensors, MDPI, 2020	).
	DOI: 10.3390/s20010245	

**13. A. Sharma, R. Kumar**, *"IoT-Based Gunshot Detection System"*, IEEE Conference on Computing, Communication and Automation (ICCCA), 2019.

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