Literature Survey

S no	Title	Year	Author	Method / Approach	Advantages	Disadvantages
1	Identification of Drowning Victims in Freshwater Bodies using Drift Prediction and Image Processing based on Deep Learning	2022	Anjana Unnikrishnan, Roshni A T, Anusha P R, Anju M Vinny, Anuraj C K	Using multiple sensor data in underwater human rescue detection system to spot drifting and drowning person in a natural water eco system. The water flow sensor which is attached to the portable device calculates the drift distance and tracks drowning person.	The Approach detected human drifting and drowning up to a range of 5m in water bodies. The final result achieved an average of 82.10% accuracy.	The performance of the model depends on the nature of the water body concerned as the drift distance is different for different water eco systems.
2	Falling and Drowning Detection framework using smartphone sensors	2022	Abdullah Alqahtani,Shtwai Alsubai,Sidra Abbas	Presents the novel ambient assistive framework by perceiving input from smartphone sensors such as accelerometer, gyroscope, magnetometer and GPS that provide accurate readings of movement of individual's body.	It detects falling, drowning and routine actions with good accuracy of 98%.	Limitation of this study is that WiFi and other cellular signal does not work properly underwater.
3	Video Based Drowning Detection System	2021	Pavithra P, Nandini S,Nanthana A,Noor Tabreen Aslam, Praveen Kumar P	The proposed system structure here comprises of a raspberry pi (Single Board Computer) equipped with a USB camera for taking the live feed from the pool area. The system also covers the alerting phenomena using a buzzer so that necessary actions are taken intermittently without any delay	Alerting a drowning state is done without any delay here, GPIO system for alerting and short message service used in cohesion with a raspberry pi computer makes this possible	A working implementation of this module is quite extensive to implement, and multiple hardware components working to near proximity of water can also lead to some malfunctioning
4	Drowning detection system on coastal lines using image processing techniques and neural network	2019	Kamyar Shiuuee,Fardin Rezaei	The features of images are extracted through image processing techniques and background omission.	Neural network has detected drowning cases with precision of 94-96%.	Challenges include high noise of sea images and the size of the drowned from far distance.
5	An early drowning detection system for IoT	2018	M.S.Muhammad Ramdhan,Muhammad Ali,Eberecchukwu Paulson,Ghazali N.Effiyana	It gives an early alarm to the guardians if the detector triggered an abnormal heartbeat and the victims are submerged under water for a long time.	The lifeguard and parents are able to monitor remotely the condition of the swimmers and alerted in real time when there is panic attack (near drowning).	System needs to be waterproof to ensure that the components are not damaged.