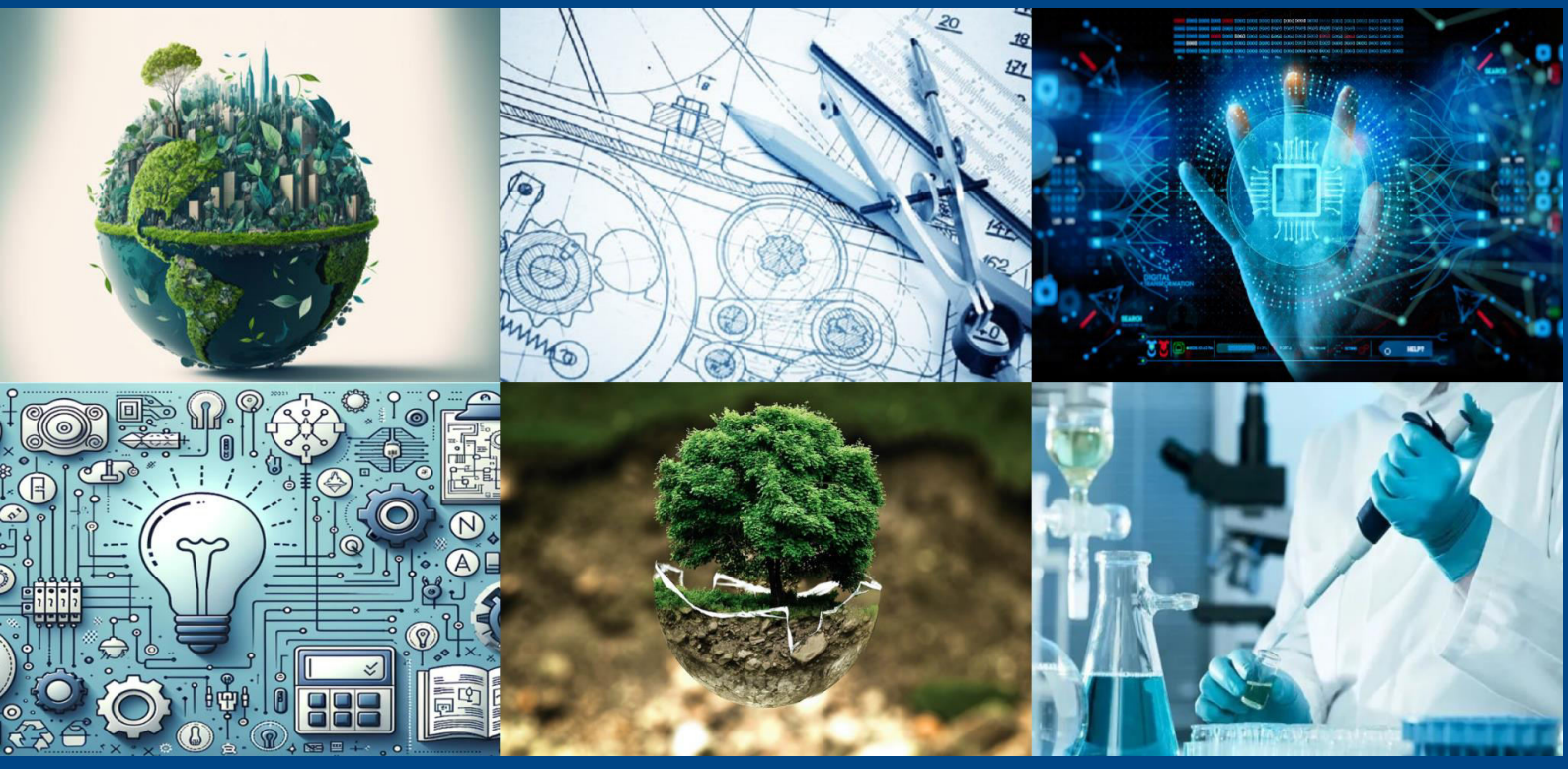
ISSN: 2582-7219

International Journal of Multidisciplinary Research in Science, Engineering and Technology

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.206 **Volume 8, Issue 3, March 2025**

© 2025 IJMRSET | Volume 8, Issue 3, March 2025| DOI: 10.15680/IJMRSET.2025.0803190

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

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Flood Alarm System

Rutuja Jagdish Jadhav, Shruti Nishchal Kothawale, Archna Sunil Savant, Harshada Nilesh Pradhane, Vrushali Bajirao Kambl, K.R.Bharamgonda

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ABSTRACT: Digital Investigationonthe cloudplatform is a challengingtask. Preservationof evidences is theultimate goal behind performing cloud forensics. In the Virtual Scenario, Virtual Machines contain evidences. If once VMDK (Virtual Machine Disk file) is destroyed, it is impossible to recover your VM. At present theredoesnot exist asinglemechanismthat canrecovera destroyed(deleted) VMagainwhichistheflaw in VM itself. All the activities on the VM is logged in VM, whereas activities of CSP (Cloud Service Provider) is logged on theserver. So even if someone deleted the VM, all the evidences will be lost. This creates a disaster for the user and actsasa barrier for a forensic investigator to dig out the private crucial data of user that was stored in the Virtual Machine sometime. We proposed with this research work, we explore the existing mechanisms and challenges in the current cloud scenario and propose an idea to prevent the unauthorized deletion of the Virtual Machines snapshots.

I. INTRODUCTION

Resources of wearewitnessingvarious drastic advancements inthefields of scienceandtechnologyover the past few decades.The current industrial age has revolutionized our lives and provides us with plenty of comforts andconveniences. However, this industrial progress has come at a hefty cost of global warmingand other environmentaldisasters such as flood, earthquake, etc. Furthermore, the loss caused by such disasters to life and property is immense. Theincreasingcarbonfootprintsandgreenhouse gaseshaveseverelyledtoanimbalanceand disturbances in the natural cycle of rains and floods. Hence, we are facing the dangers of unwarned and inevitable floods more than ever before. Inorderto detect andavoid floods inatimely manner,technologyplaysaveryimportantrole. With thehelp of the current technology privileges, we can detect and prepare ourselves for an upcoming disaster. Studies show that such an initiative can really come in handy.InaveryrecentUSfloodingdueto stormsintheMidwest,lossoflifeandproperty damage wereminimized duetotheemergency systems available there. On the otherhand, North Koreastruggledtodealwith thedisplacement of over 300,000 people, approximately 221 deaths and a cost of $6 million- most to feed the homeless survivors, and this all resulted in part from the lack ofdevelopment of warning system sand informationat the community level of the impending flooding. The same was seen in the floods that happened in the Indian states of Kerala and Tamil Nadu. Fromtheaboveexamples, wemaycometothe conclusion thataneffectivewarningsystemis actually a serious problem to developing and under-developed countries. A nation like the US has a rich economy and thus, no limitations to resource usage. Warning communities of the incoming flood, therefore, is an expensiveproposal given the limited resources of the countries. The current methods we are witnessing various drastic advancements in the fields of science and technology over the past few decades.The current industrial age has revolutionized our lives and provides us with plenty of comforts and conveniences.However,this industrialprogresshascomeat aheftycostof globalwarmingand other environmentaldisasters such as flood, earthquake, etc.
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II. LITERATUREREVIEW

ApplicationofGSMcommunicationsystemonflood alarmsystems DediSatria, SyaifuddinYana, Taufik Hidayat, Saumi Syahreza, Elin Yusibani, Rizal Munadi Journal of Physics: Conference Series 1232 (1), 012023, 2019

Flood disaster has become a category of disaster that is prioritized nationally by the Indonesian government. Toreducethenumber of flood victims, it was emphasized to all parties to beableto provide disaster mitigation solutions in the form of both long-term and short-term programs. For short-term programs in disaster mitigation in this study aims to build a flood alarm system by utilizing GSM communication between flood detector systems and wireless flood alarm systems. Flood detector system is built using an ultrasonic sensor as a water level detector, Arduino Uno microcontroller as a data processor and a SIM900 sender GSM module as a data communication medium to a flood alarm system consisting of a GSM SIM900 receiver module, arduino microcontroller and an electric alarm. This study produced a prototypeflood alarmsystemthat can ignite when the water level is> 5 cm. It is expected that this prototype can be utilized to contribute to government programs in the field of disaster mitigation.

Stig-IngeBeckman, JanHolst, GeorgLindgrenJournalofTimeSeriesAnalysis11(1), 1-18, 1990

A method for evaluating a predictor-based alarm system is studied in this paper. The predictor is composed of a 'deterministic' component reflecting external information and a statistically based component for the error between the measurements and the external predictor. The aim of the predictor study is twofold:it is a means of interpretingtheconnections betweenthealarmandthecatastrophe, andit can be used to select suitable alarm levels. As an application, the performance of a water-level predictoras part of a flood warning system has been evaluated. The result of this analysis shows that an alarm system which operates when thepredictor reaches a certain level will tend to give either too many alarms or alarms that are out of phase with the catastrophe.

MatthieuLucke, MoncefChioua, ChrissGrimholt, MartinHollender, NinaFThornhill Journalof Process Control 79, 56-71, 2019

During an alarm flood, the alarm rate isgreater than the operator can effectively manage. Many alarm data analysis methods have been proposed in the literature to mitigate the impact of alarm floods. This paper gives a review of the state of the art in alarm data analysis and aims at structuring the field. A distinction between sequence mining methods that apply to alarm sequences and time series analysis methods that apply to alarm series is suggested.

Advances in alarm data analysis with a practical application to online alarm flood classification Matthieu Lucke, Moncef Chioua, Chriss Grimholt, Martin Hollender, Nina F Thornhill Journal of Process Control 79, 56-71, 2019

During an alarm flood, the alarm rate is greater than the operator can effectively manage. Many alarmdata analysis methods have been proposed in the literature to mitigate the impact of alarm floods. This paper gives a review of the state of the art in alarm data analysis and aims at structuring the field. A distinction between sequence mining methods that apply to alarm sequences and time series analysis methods that applytoalarmseries is suggested. Thereview highlights that onlineapplications to help the operators during alarm flood episodes.

UltrasonicFloodSensor:AProposedAlarmDevice toFloodProneAreas

JuliaLouTSalor,LeslieAnnPBanao, AprilKayeRDeocadez, CarmiMariDMoratin

History records multitude cases of flood and its devastating damages all over the world. Most likely than not, thesefloods always lead to loss of life, and damages to properties such as residential, businesses and infrastructures, amongothers. Sadly, hearingstories of traumatic experiences of theaffectedcommunities has already become a cliché for everyone.

Industrialalarmsystems:Challengesandopportunities PankajGoel, AniruddhaDatta, MSam Mannan Journal of Loss Prevention in the Process Industries 50, 23-36, 2017

Industrial alarmsystems areverycritical for the efficient andsafeoperationandcontrol of plants. Alarms areused to

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informtheoperator about possibleprocess deviations fromthenormal so that theoperator can take appropriate corrective action. Alarm activation and the corresponding response from the operator together serveas one of the critical layers of protection during the occurrence of a process fault. With the rapid advancement in control systems technology over the past few decades, the number of process sensors deployed for a particular.

Implementation of a Long-Distance Monitor and Automatic Alarm System of Flood Disaster in PoYang Lake Area Youliang Chen, Zhaoru Wang 2008 International Symposium on Information Science and Engineering 2, 120-123, 2008

ThePoYangLakeis thelargest fresh lakeinChina, alsoa nationalfamous placeofcommoditygrain. But on the other hand, flooding disaster happens frequently, and the economic loss caused by flood is extremely huge. In order to reduce the loss caused by the flooding disaster, it is necessary to monitor the flood disaster situation in PoYang Lake area. But so far, the disaster information monitoring in PoYang Lake area mainly through on-spot inspection, manual gathering and the manual processing report form, these ways are time-consuming and laborious

Automated flood water level sensor and alarmsystem using Arduino Uno Atashia Anyka B Magnaye, SeleneMarieSCruz,VaughnXavierMReguyal,AndyJosephLAscaño,MattAaronA Quilit, Jenny A Limos-Galay International Journal of Research 8 (3), 61-69, 2024

This study focuses on developing and evaluating an Automated Flood Water Level Sensor and Alarm System using Arduino Uno to bolster flood monitoring and early warning capabilities. The system integrates water levelsensors withArduinoUnotodetect risingwater levels andtrigger alarms for timely alerts. By investigating the system's effectiveness across various parameters like accuracy, effectiveness, maximumdistancedetection, andwater level measurement, theresearchaimedtoprovideinsights intoits performance and potential impact on flood resilience effort

Design of early warning flood detection systems for developing countries Elizabeth Basha, Daniela Rus 2007 International Conference on Information and Communication Technologies and Development, 1-10, 2007

In developing countries, flooding due to **natural** disasters such as hurricanes and earthquakes results in massive loss of life and property. Warning communities of the incoming flood provides an effective solutiontothis bygivingpeoplesufficient timeto evacuateandprotect their property. However, therange of early warning system solutions introduces a tangle of conflicting requirements including cost and reliability, and creates several interesting problems from factors as diverse as technological, social, and political.

III. CONCLUSION

The main purpose of a water over flow alarm is to prevent property damaged caused by flooding by alertinghomeownersor propertymanagerswhenwater levelsriseunexpectedly, theycantakepromot action to mitigate potential damage to floors , walls , furniture , and other belongings .

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