SMART SOLUTION FOR RAILWAYS

Literature Survey:

S.NO	TITLE OF JOURNAL	AUTHOR	TECHNOLOGY USED
1.	Smart Computing Applications in Railway Systems - A case study in Indian Railways Passenger Reservation System	*Parag Chatterjee* *Asoke Nath*	The demand for safe, fast, and reliable rail services continues to be the reason for concern in all the countries across the globe. Lack of operational efficiency and reliability, safety and security issues, and aging railway systems and practices are haunting various countries to bring about a change in their existing rail infrastructure. The global rail industry struggles to meet the increasing demand for freight and passenger transportation due to lack of optimized use of rail network and inefficient use of rail assets. This is expected to induce rail executives to build rail systems that are smarter and more efficient. The passenger reservation system of Indian Railways is one of the world's largest reservation models. Daily about one million passengers travel in reserved accommodation with Indian Railways. Another sixteen million travel with unreserved tickets in Indian Railways. In this vast system, it is a herculean task to efficiently handle the passenger data, which is a key point of consideration now-a-days. In this paper, the authors have explored different issues of implementing smart computing in railway systems pertaining to reservation models.

2.	**Research and Analysis on the Top Design of Smart Railway**	*Shaofu Lin* *Yafang Jia* *Sibin Xia*	Deepening the informatization and intelligent construction of railways has become an inevitable choice to promote the innovation and development of railways and enhance their core competitiveness.At present,China has in-depth research in smart cities,smart transportation and other fields, but the research on smart railways is still in its infancy, and it is urgent to make plans for the development of smart railways to provide guiding suggestions for the development of railway informationization.Based on the research results of smart cities and smart transportation in related fields at home and abroad, combined with the application trends of internet technology and big data technology in railway informatization, this paper attempts to give a clear definition of smart railway from the perspective of smart city development. It also proposes the overall structure of the top-level design of the smart railway, and the application of the smart railway in combination with the development needs of the construction of the Jing-Zhang high-speed railway.
3.	**Application of Smart Computing in Indian Railway Systems**	*Parag C Asoke* *Nathhatterjee*	Almost all the countries across the globe strive to meet the demand for safe, fast, and reliable rail services. Lack of operational efficiency and reliability, safety and security issues, besides aging railway systems and practices are haunting various countries to bring about a change in their existing rail infrastructure. The global rail industry struggles to meet the increasing demand for freight and passenger transportation due to lack of optimized use of rail network and inefficient use of rail assets. Often they suffer from the lack in smart technologies and latest technological updates to provide the most efficient passenger services. This is expected to induce rail executives to build rail systems that are smarter and more efficient. The passenger reservation system of Indian Railways is one of the world's largest reservation models. Daily about one million passengers travel in reserved accommodation with Indian Railways. Another sixteen million travel with unreserved tickets in Indian Railways. In this vast system, it is a herculean task to efficiently handle the passenger data, which

			is a key point of consideration now-a-days. But the implementation of the latest technological updates in this system gradually turns inevitable due to increasing demand for providing the most efficient passenger services. Handling the passenger data efficiently backed by intelligent processing and timely retrieval would help backing up the security breaches. In this paper, the authors have explored different issues of implementing smart computing in railway systems pertaining to reservation models besides pointing out some future scopes of advancement.
4.	**Internet of Things (IoT) and Indian Railways**	*Rajnish Kumar*	• Open Wi-Fi would be made available at 400 railway stations across the country • Digitised mapping of Rail land will be initiated to counter encroachment. • An integrated customer portal is being put in place for customers to access various railway services at one place • An 'Operation five minutes' will be introduced for issuing unreserved tickets. Under this facility, ticketless passengers can get regular tickets within five minutes of entering station. Unreserved ticket purchase is also expected to be made simpler through smart phones and debit cards • SMS alert service would be introduced to inform passengers about train arrival and departure • Mobile charging facility would be made available in all trains and stations. The facility will be extended to general coaches as well. • Railway helpline number 138 will become operational 24×7. Toll free number 182 will be created for security related complaints. • CCTVs to be introduced in select trains and suburban trains for women safety • E-catering will be launched for select meals from an array of choices, ordering food through IRCTC websites at the time of booking tickets.

| 5. | **GPS/ GSM based train tracking system utilizing mobile networks to support public transportation.** | *Dileepa Jayakody,* | The paper presents a solution implemented at Sri Lanka, to provide an intelligent train tracking and management system to improve the existing railway transport service. The solution is based on powerful com bination of mobile computing, Global System for Mobile Communication (GSM), Global Positioning System (GPS), Geographical Information System (GI S) technologies and software. The in-built GPS m odule identifies the train location with a highest accuracy and transfers the information to the central system via GSM. The availability of this information allows the Train Controller to take accurate decisions as for the train location. Location data can be further processed to provide visual positioning using m aps granting a wholesome view on train location. Positioning data along with train speed helps the administration to identify the possible safety issues and react to them effectively using the communication methods provided by the system . Additionally, the location information can be used to facilitate accurate scheduling with regard to train arrival and departure on each station. |