Annotated Bibliography Rough Draft

By: Farooq Anwar

How can AI optimize traffic flow and safety at the entrances of Innovation Academy during peak hours? I chose this question due to the rise of AI. During this project, I hope to learn how to train AI and how to address traffic congestion.

Abena, A., & Obiri-Yeboah. (2021). Overview and Recommendations for Road Traffic Data Collection Methods and Applications in Ghana. *International Journal of Engineering Research and Applications Www.ijera.com*, *11*(2), 1-09. <https://doi.org/10.9790/9622-1102010109>

The article "Overview and Recommendations for Road Traffic Data Collection Methods and Applications in Ghana" by Abena A. Obiri-Yeboah, Maud S. Gbeckor-Kove, and Yolanda Oliver-Commey reviews general methods of collection applied to traffic data collection. The review shows the movement from manual methods through semi-automatic to fully automatic methods and highlight the advantages of the shift towards automatic systems: accuracy, cost, and safety. It is suggested that at this stage, modern collection methods based on intelligent transport system methods are at a stable and safe moment and should be considered for Ghana in view of better project planning and management.

The present article is important in understanding the current situation and future trends of traffic data collection methods in Ghana. It explains manual and automated methods, advancing an equal argument of their advantages and disadvantages. The information can be trusted since it comes from a review of the literature and practical applications in Ghana. This source aims at recommending improvements in the state of traffic data collection methods which would ensure the improvement of transportation planning and management.

This source gives context to my research on methods of traffic data collection. I am given an overview of the methods used in Ghana and I can use the compared data with other regions. While suggestions towards modernizing data collection methods might give insights into my argument for the adoption of advanced technologies in managing traffic. I will use this source in supporting my research project by demonstrating the benefits accruable with automated data collection systems.

Rao, A. M. (2012). *Measuring Urban Traffic Congestion – a Review*. International Journal for Traffic and Transport Engineering; City Net Scientific Research Center Ltd., Belgrade. <https://www.academia.edu/85634298/Measuring_Urban_Traffic_Congestion_a_Review>

Kalaga Ramachandra Rao undertakes a comprehensive review of many metrics created to measure urban traffic congestion. He then presents the strengths and weaknesses of each metric, explaining the identification of the characteristics of congestion in selecting the proper mitigation measures.

This article is a helpful read to understand various congestion metrics and their application areas. The facts are put in a balanced manner where the strengths and weaknesses of each measure are discussed. Material is reliable, academic, and adds to the literature as it involves a systematic review of existing metrics.

This text helps set a background for my research into the methods of traffic congestion measurement. It gives an insight into how much each of the metrics that may be employed is effective and thus helps me to build my argument on which measure to adopt. I will apply this source in developing my research project by highlighting both the benefits and the limitations of different congestion metrics.

*Industry Spotlight: Civil Engineering & Traffic Management | AUGI - The world’s largest CAD & BIM User Group*. (2024). Augi.com. <https://www.augi.com/articles/detail/industry-spotlight-civil-engineering-traffic-management>

Industry Spotlight: Civil Engineering & Traffic Management" In her article, Marilyn Law describes the work of traffic management within the sphere of civil engineering, mainly considering the minimization of disruption and maximization of safety. It explains how designing temporary road layouts can be done using the design tool AutoCAD so that during road construction projects, safety can be ensured for the public as well as the construction workers.

This article is a valuable source because it gives an essentially realistic view of how traffic management may be incorporated into civil engineering projects. The information is valid and comes from a well-published industry, because she is a great importance to the field of civil engineering.

In this regard, the source relates my research project into the methods of traffic management during construction projects. This serves to shape my argument of safety and efficiency in the management of traffic. I can use the source to strengthen my research project by referencing practical contexts in which civil engineering traffic management tools are applied.

Rahman, H. (2019). *Improving Traffic Safety at School Zones by Engineering and Operational Countermeasures*. Academia.edu. <https://www.academia.edu/94121878/Improving_Traffic_Safety_at_School_Zones_by_Engineering_and_Operational_Countermeasures>

In his article "Improving Traffic Safety at School Zones by Engineering and Operational Countermeasures," Md Hasibur Rahman seeks an idea on the efficiency of different traffic control devices and roadway countermeasures in school zones. It shapes high-crash school zone locations in Orange and Seminole Counties of Florida and applies microsimulation to find accurate countermeasures through speed reduction or driveway modifications that might be more effective in improving safety.

The article served as a good source for practical measures to enhance safety in the school zones regarding traffic. The information is reliable since it comes from a comprehensive study and microsimulation analysis. It would be quite helpful in the field of road safety. The methodology is securely founded on academic research, with the results offering actionable insights for transportation planners and decision-makers.

This source could support my research into how traffic safety measures have been implemented in school zones. It places into perspective some of the more effective countermeasures employed and their effects, thus helping me to build up an argument for my project. I will be able to support my research project with this source by citing the benefits from certain engineering and operational countermeasures.

Sayed, S. A., Abdel-Hamid, Y., & Hefny, H. A. (2023). Artificial intelligence-based traffic flow prediction: a comprehensive review. *Journal of Electrical Systems and Information Technology*, *10*(1). <https://doi.org/10.1186/s43067-023-00081-6>

The work "Artificial Intelligence-Based Traffic Flow Prediction: A Comprehensive Review" by Sayed A. Sayed, Yasser Abdel-Hamid, and Hesham Ahmed Hefny reviews the Machine Learning and Deep Learning techniques applied to traffic flow prediction. It also discusses ITS in smart cities and presents some challenges with possible solutions for improvement in the accuracy of traffic prediction.

This article is a perfect source of information about AI applications in traffic flow prediction. Two sides of different techniques were cleanly presented. The review can be considered to be of great importance with regard to traffic management studies and smart city applications.

This source helps to provide context for my research on AI-based traffic correction methods. It offers insight into recent techniques and the problems that occur with AI. This can help me shape my argument in favor of advanced AI methods for an application in traffic management. I could then apply this source in support of my project by providing recommendations of and limitations for AI-based traffic prediction.

References

Abena, A., & Obiri-Yeboah. (2021). Overview and Recommendations for Road Traffic Data Collection Methods and Applications in Ghana. *International Journal of Engineering Research and Applications Www.ijera.com*, *11*(2), 1-09. <https://doi.org/10.9790/9622-1102010109>

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*Industry Spotlight: Civil Engineering & Traffic Management | AUGI - The world’s largest CAD & BIM User Group*. (2024). Augi.com. <https://www.augi.com/articles/detail/industry-spotlight-civil-engineering-traffic-management>

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