# Urban Traffic to Sensor's Data Visualization – Recent Research Results and Applications

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*Abstract*— **In this keynote address, I will explore advanced image processing techniques, focusing particularly on YOLO-based object detection technologies and offering a comparative analysis of various methodologies in this domain. Furthermore, I will discuss the application of artificial neural networks in optimizing the material composition and thickness of tandem solar cells to maximize efficiency, specifically in the context of quantum solar energy. The presentation will also highlight significant findings from my research group's work in IoT, AI, and data analytics. One of the key projects involves the development of a secure sensor data monitoring and visualization system using OPC-UA for our smart factory and water cluster laboratories. Additionally, I will delve into our research on enhancing mineral prospect mapping through machine learning, with a particular focus on addressing imbalanced geophysical datasets and employing innovative data visualization approaches. These topics and more will be examined in depth, demonstrating the practical applications of cutting-edge research in these fields.**

***Keywords- Minerals Prospects Mapping, Yolo for Urban Traffic, Digital Twin, Fraud Detection, Visualization Methods***

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**About author**



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