

Joy Group's AI traffic light technology tackles global traffic congestion

Initiating a new era of AI-based traffic control

UNITED STATES, March 27, 2024 /EINPresswire.com/ -- Traffic is the blood of modern cities. Only when the blood flow is smooth can the city develop healthily. However, with the acceleration of urbanization, there are more and more serious traffic jams in cities, which not only affect the quality of life of residents but also restrict the sustainable development of cities. According to the statistics of the Ministry of Public Security of China, the number of motor vehicles in China exceeded 435 million in 2023, and the economic losses caused by traffic congestion accounted for 20% of the per capita disposable income, equivalent to 5%-8% of the annual GDP.

For this reason, a collective of PhDs from MIT, Harvard University, Zhejiang University, and other world-renowned universities gathered together to establish Shenzhen Joy Smart Data Co., Ltd, also known as Joy Group. Facing the global challenge of traffic congestion, Dr. Lijuan Su, the founder and CEO of Joy Group, who earned her Ph.D. in Computer Science from Harvard and Zhejiang University, has introduced the artificial intelligence smart traffic light system developed by their team.

Joy AI traffic lights are enhanced with edge AI chips and comprehensive smart scheduling algorithms, transforming each intersection with a robotic traffic officer that can "calculate and control" like an experienced human traffic cop. It can work continuously without taking a break,



Founder and CEO of Joy Group, Lijuan Su



Joy Group

keeping an eye on all vehicles and pedestrians, and accurately controlling the timing, phasing, and stages of traffic lights in real-time, to cut wait times and emissions based on real-time vehicle and pedestrian flows. This upgrades the lights from a "vehicles and pedestrians wait for lights" fixed time control mode to a "lights watch vehicles and pedestrians" mode with real-time precision and intelligent scheduling. It also provides a collaborative vehicle-road "God view" for solo vehicle intelligence, addressing the problem of blind spot perception at intersections.

The system is already implemented on a large scale in dozens of cities across China, such as Guangzhou, Shenzhen, Tianjin, Chengdu, Xiangyang, Wuhan, Shijiazhuang, Cangzhou, Sanya, Xiaogan and is expanding rapidly.

Test reports indicate that the system can reduce congestion time and severity by more than 25% during peak periods, decrease off-peak delay time and the number of vehicle stops by over 30%, reduce the rate of idle green lights by more than 85%, and enhance overall intersection traffic efficiency by over 30%. It effectively saves fuel, and reduces exhaust emissions and greenhouse gas emissions caused by congestion, waiting, and frequent stop-and-go; it also significantly lowers the accident rate.

According to incomplete statistics, by the end of 2023, China has approximately 1.2 million traffic intersections, with about 400,000 of them being light-controlled. It is estimated that the market scale for this sector will exceed 4 trillion yuan. As of the latest available data, Joy Group has implemented over 800 AI traffic lights, with fewer than 100 in operation within China and under 200 on a global scale outside of their installations. Based on these numbers, Joy's AI traffic light system is estimated to hold over 85% of the market share in China and 80% globally. In addition, Joy Group has launched a comprehensive trinity solution consisting of artificial intelligence traffic lights, generative elastic buses, and low-altitude flight systems.



Office



Work Place

Joy Group is a national high-tech enterprise adhering to four core innovations: entropy and noise reduction theory, hyper-fusion sensing algorithm, intelligent scheduling algorithm, big data processing algorithm, edge super-computing, etc, which are widely applied in their four main businesses: road intelligence, vehicle intelligence, transportation services, and local life services. The Group has an R&D center, market center, production center, and project center, and has subsidiaries and offices in Shenzhen, Beijing, Shanghai, Hubei, Hebei, Hunan, Hainan, Silicon Valley, Boston, etc.

In the past few years, Joy Group developed rapidly at a rate of over 300%. It now boasts hundreds of patents has participated in the drafting of multiple national standards, and helped cooperative cities to win many honors such as the National IOV Pilot Award, the 2023 World Smart City Transportation Award, etc. We sincerely look forward to cooperating with more like-minded partners to create a better future! For more, please see Joy's official website: <https://www.gabjoy.com>.

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