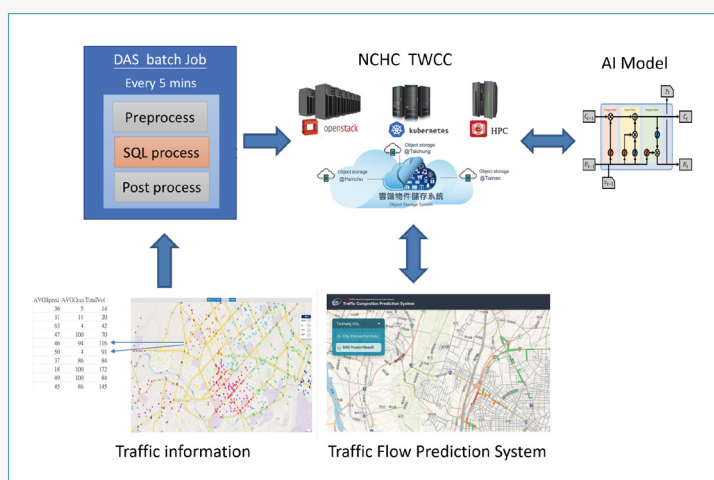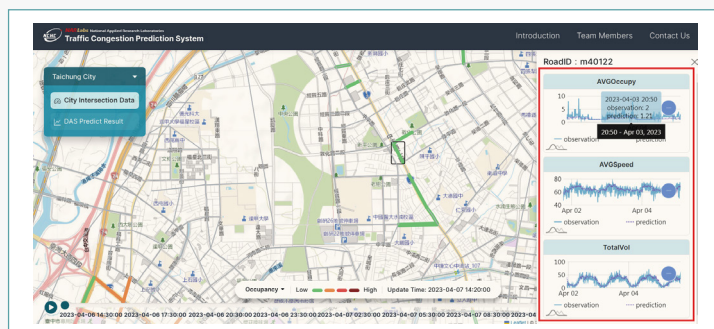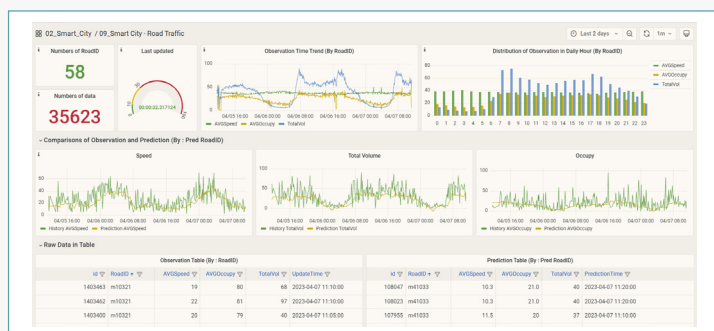# Traffic Congestion Prediction System (TCPS)

Contact Information :
Chung-I Huang   Ph.D. schumi@narlabs.org.tw
Team :
Chung-I Huang, Jih-Sheng Chang, Chen-Kai Sun,
Wei-Yu Chen, Jyh-Horng Wu, Wen-Yi Chang, Fang-Pang Lin

National Center for High-performance Computing

Traffic information   Traffic Flow Prediction System

Traffic Congestion Prediction System (TCPS) is a collaborative achievement between NCHC and Professor Cathy Wu of the Massachusetts Institute of Technology (MIT). It harnesses real-time urban road sensor data stored in the cloud, encompassing comprehensive data on traffic volume, speed, and lane occupancy, enabling in-depth analysis of traffic congestion. TCPS utilizes advanced deep learning techniques, including Recurrent Neural Networks (RNN) for capturing short-term dependencies and Long Short-Term Memory (LSTM) Network for managing long-term memory, accurately forecasting traffic congestion for the next 30 minutes. Its applications include providing real-time traffic congestion predictions for route planning, enhancing the commuting experience, reducing carbon emissions, and assisting urban planning by offering historical and predictive data. TCPS represents a significant technological advancement in addressing urban traffic congestion.