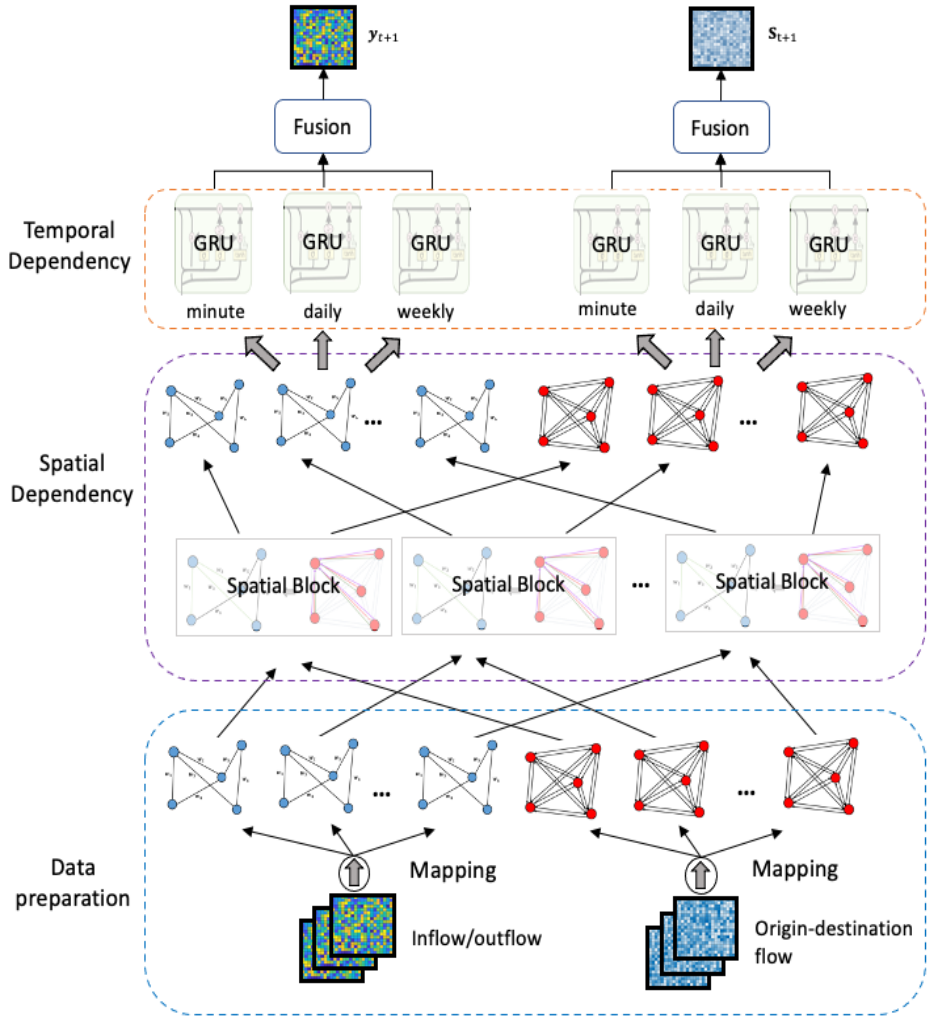
Holistic Prediction of Public Transport Passenger Flows: A Spatio-Dynamic Graph Network Approach

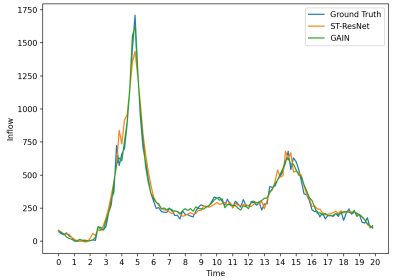


- **Background**

Public transport system is the basic infrastructure in urban areas, which is closely connected with people's daily life. How to utilize big data to better predict traffic flow has been raising researchers'interest in data mining and transportations community for decades.

- **Goal**

Predict the inflows and outflows for all nodes in city graph and O-D matrix simultaneously at the next multi time intervals.



- **Contribution**

We are the first to consider …	Then what we do …
The interrelationships between public transport inflows/outflows and O-D transit flows	Develop a genuine methodology for holistic prediction of them
Dynamic spatial correlations of passenger inflows/outflows	Propose a spatio-dynamic neural network structure with dynamic graph convolutions
Apply GAT to learn the complex and non-adjacent spatial correlations of O-D transit flows	The learnt dynamic attention graphs are used to help predict inflows/outflows