

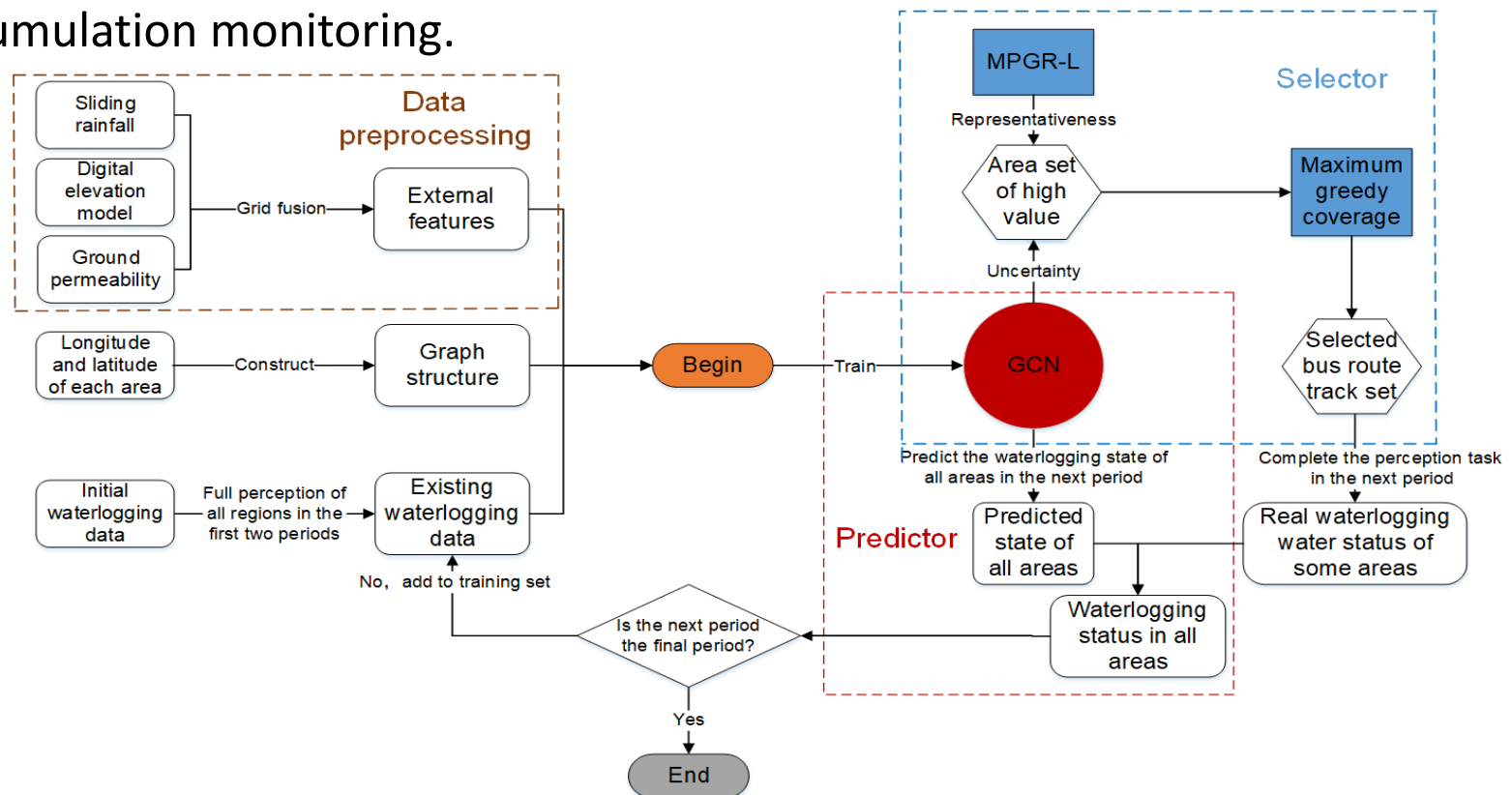
# Route Selection for Opportunity-Sensing and Prediction of Waterlogging

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Frontiers of Computer Science, DOI: [10.1007/s11704-023-2714-8](https://doi.org/10.1007/s11704-023-2714-8)

# Problems & Ideas

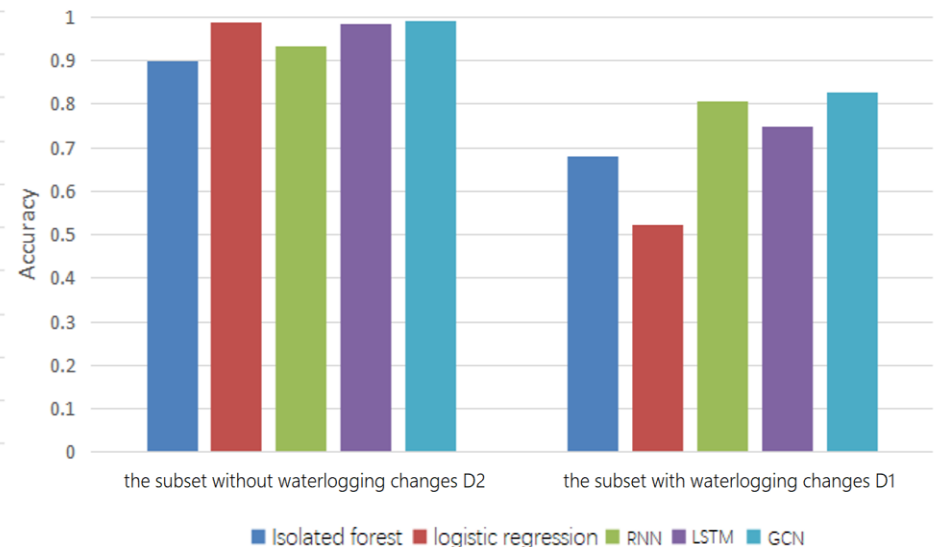
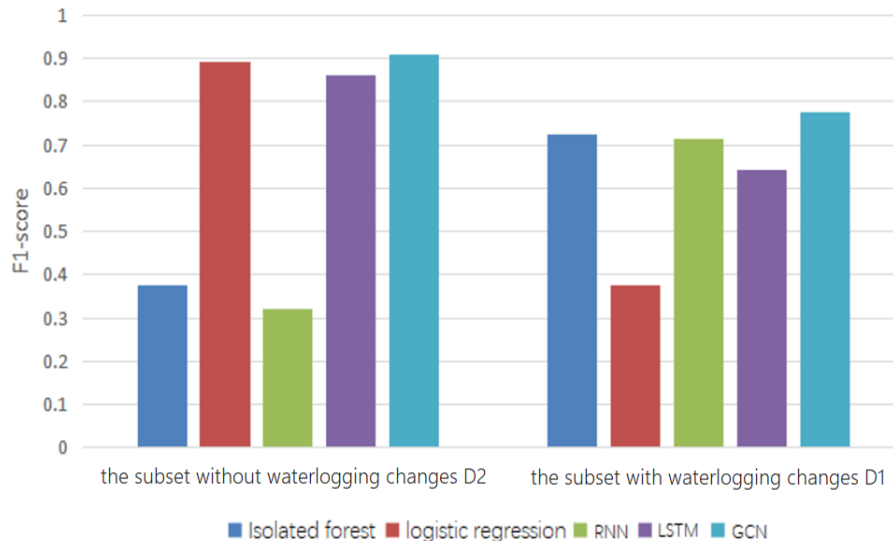
- Problems of Accurate monitoring of urban water accumulation:
  - A common solution is to predict the overall water logging situation of a city by collecting partial waterlogging data.
  - Prediction algorithms are either driven only by knowledge or only by data and the collection of some waterlogging data is not selective.
- Ideas: Follow the idea of sparse crowdsensing, the opportunistic sensing of limited bus routes is used to realize large-scale fine-grained spatiotemporal water accumulation monitoring.



Urban Waterlogging Monitoring Framework

# Main Contributions

- Contributions:
  - A novel waterlogging monitoring model based on sparse crowd sensing, using limited bus lines to realize ponding monitoring;
  - A prediction algorithm combines knowledge-driven and data-driven, and can be used to predict the water accumulation data of all regions in the next period;
  - The model can effectively realize low-cost, high-coverage, fine-grained urban water monitoring.



Comparison of the performance of each predictor on a dataset with or without water accumulation changes. The GCN method used in this article works best.