Junchen Wang

Postgraduate Student

Phone number: +86 15629071318

Email: wangjunchen@cug.edu.cn

Mail Address: No. 388, LuMo Road, HongShan District, Wuhan City, Hubei Province

Education Background

China University of Geoscience, school of Automation 2017.09-present

Control Science and Engineering, Master candidate

China University of Geoscience, the Faculty of Resources 2013.09-2017.06

Resource Prospecting Engineering, Bachelor

Research Experience

China University of Geoscience, the Faculty of Resources 2016.09-2017.06

- Use Jupyter to deal with the geological data from field acquisition, specifically using Numpy, Pandas and Scipy for data analysis and Matplotlib for data visualization.
- Study about the tracing of water pollution source in water supply network system.

China University of Geoscience, school of Automation 2017.06-2017.10

- Assist to complete supervisor's C++ code project OFEC(Open Framework of Evolutionary Computation)
- Study about the non-dominated sorting for multi-objective optimization

Skills

C++ programing for conducting simulation experiments

Python script for data processing and visualization

Research Plan

Genetic algorithms have shown great power in solving most kind of water resources management optimization problems mainly including coastal aquifers management, groundwater remediation and pollution control, the inverse problem of groundwater hydraulics, surface water hydrology and reservoir management.

As the rapid improvement of computation ability, flow simulation, which form the main part of the objective function, can be more and more sophisticated. But we still use the surrogate models, and distribute the greatly developed computation power and memory to data mining.

The data produced from the evolving process of genetic algorithm can be analyzed and then provide posteriori knowledge, which we can take advantage of to do more effective operator and explore the solution space more sufficiently.