



Lu LIU

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Profile

I am a programmer, a GISer and a cartographer. My interests are mainly related to programming and mapping, especially in the areas of network analysis, geospatial data processing and cartographic visualization. Most of my personal projects are open-sourced on Github (<https://github.com/tumluliu>). I will be open to global working opportunities in late 2016.

Skills

Software Development

Python, C, Bash, SQL

R, Javascript

.NET/C#, Java, C++

GIS Training

Quantum GIS, ArcGIS

PostgreSQL/PostGIS

Network analysis

Cartographic Design

CartoCSS

Mapbox Studio, TileMill

CartoDB

Experience

National University of Defense Technology

Lecturer in Department of Information Engineering

2/2011-Present

Teaching

1. Geographic Information Systems from 2012 to 2015 for undergraduates
2. Spatial Information Systems from 2012 to 2014 for graduates

Research and Development

Involved in the development of a high-performance GIS platform, namely HiGIS (<http://higis.org.cn/higis-wan>) under the support of "High-performance Geocomputation on Modern Hardware" project. Responsible for:

1. System architecture design
2. RESTful web services for cartographic visualization
3. HPC infrastructure purchasing, administration and maintenance

Education

Technische Universität München

Cartography, supervised by Prof. Dr.-Ing. Liqiu Meng

Dr.-Ing., summa cum laude - 2011

National University of Defense Technology

Information and Communication Engineering

Master of Engineering - 2007

National University of Defense Technology

Communication Engineering

Projects

(ongoing)

High-performace Geographic Information Systems

National High-tech Research and Development Program of China (863 Program)

Data model and algorithms for socially-enabled multimodal route planning service

National Natural Science Foundation of China (NSFC) project

CartoCSS guide (Chinese version)

Tutorial of cartographic design with CartoCSS as well as the language reference in Chinese. It is an open book published on Gitbook (https://tumluliu.gitbooks.io/carto_zh-cn).

Multimodal route planning in Python

Python package of multimodal route planning algorithms (<https://github.com/tumluliu/pymmrouting>).

Multimodal route planner (mmrp) API service

A JSON-RPC style API web service of multimodal route planning. Visit <http://luliu.me/?p=96> for more information.

Multimodal route analysis and visualization

A comparative analysis between human trajectories and machine-planned multimodal routes based on crowd-sourced massive GPX data.

Publications

HiGIS: when GIS meets HPC

Proceedings of the 12th International Conference on GeoComputation, 2013

Lu Liu, Anran Yang, Luo Chen, Wei Xiong, Qiuyun Wu, Ning Jing

Multimodal route planning - Its modeling and computational concerns

CRC Press, 2013

Lu Liu, Liqiu Meng

General-purpose optimization methods for parallelization of digital terrain analysis based on cellular automata

Computers & Geosciences, Vol. 45, 2012

Guo Cheng, Lu Liu, Ning Jing, Luo Chen, Wei Xiong

Geographical workflow system over HPC clusters based on MPI

Proceedings of the 12th International Conference on GeoComputation, 2013

Anran Yang, Lu Liu, Luo Chen, Ning Jing