

Digital Archiving Technology Group

Project Leader

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Automatic Generation of Virtual 3D Kyoto Streets

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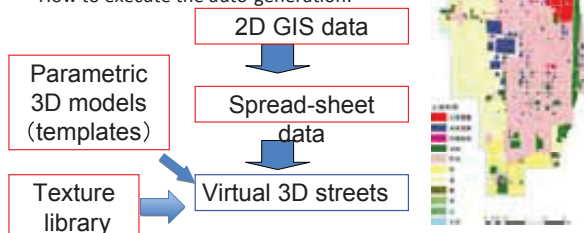
Department of Information Science and Engineering,
Ritsumeikan University

Backgrounds of the research

- Growing demands of virtual 3D streets
 - Researches of history, literature, geography, etc
 - Disaster simulation
 - etc
- Difficulties in creating high-quality virtual 3D streets
 - High costs in price, time, and man power
 - Insufficient data on details of cities in the past
- Development and prevalence of GIS (geographical information system)

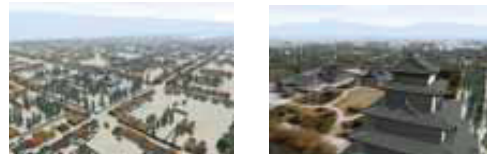
Aim of Study

- GIS data:
 - Computerized map data
 - Easy processing/utilization
- 2D GIS data → auto-generation of 3D streets
- How to execute the auto-generation:



Auto-Generation of Kyoto Streets (1) Edo Era

- Auto-generation Kyoto streets in the early Edo Era
 - Based on old maps and modern terrain data
- Incorporation of local area types
 - e.g. types of Machi-ya houses
- Auto-generation of storehouses
 - Automatic decision of proper densities



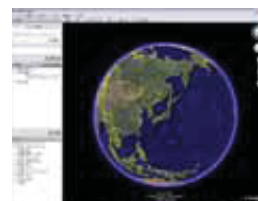
Auto-Generation of Kyoto Streets (2) Modern Age

- Automatic tuning of building height
 - Simulation with constant/random, height or with height restriction.
- Plural entrances
- Texture libraries of office, shops, etc.



Viewing in Google Earth (in preparation)

- Google earth is a good platform suitable for visualizing/publicizing virtual streets on the Web
- Many environments are supported
 - Windows(2000, XP, Vista), Mac OS X, Linux



Snapshot of Google Earth