



GIO.G: A Generator for Indoor-Outdoor Graphs to Simulate and Analyze Urban Environments

Vasilis E. Sarris, Connor P. Sweeney, Sean M. Linton, Brian T. Nixon, Constantinos Costa*, Panos K. Chrysanthis

github.com/admtlab/GIO.G

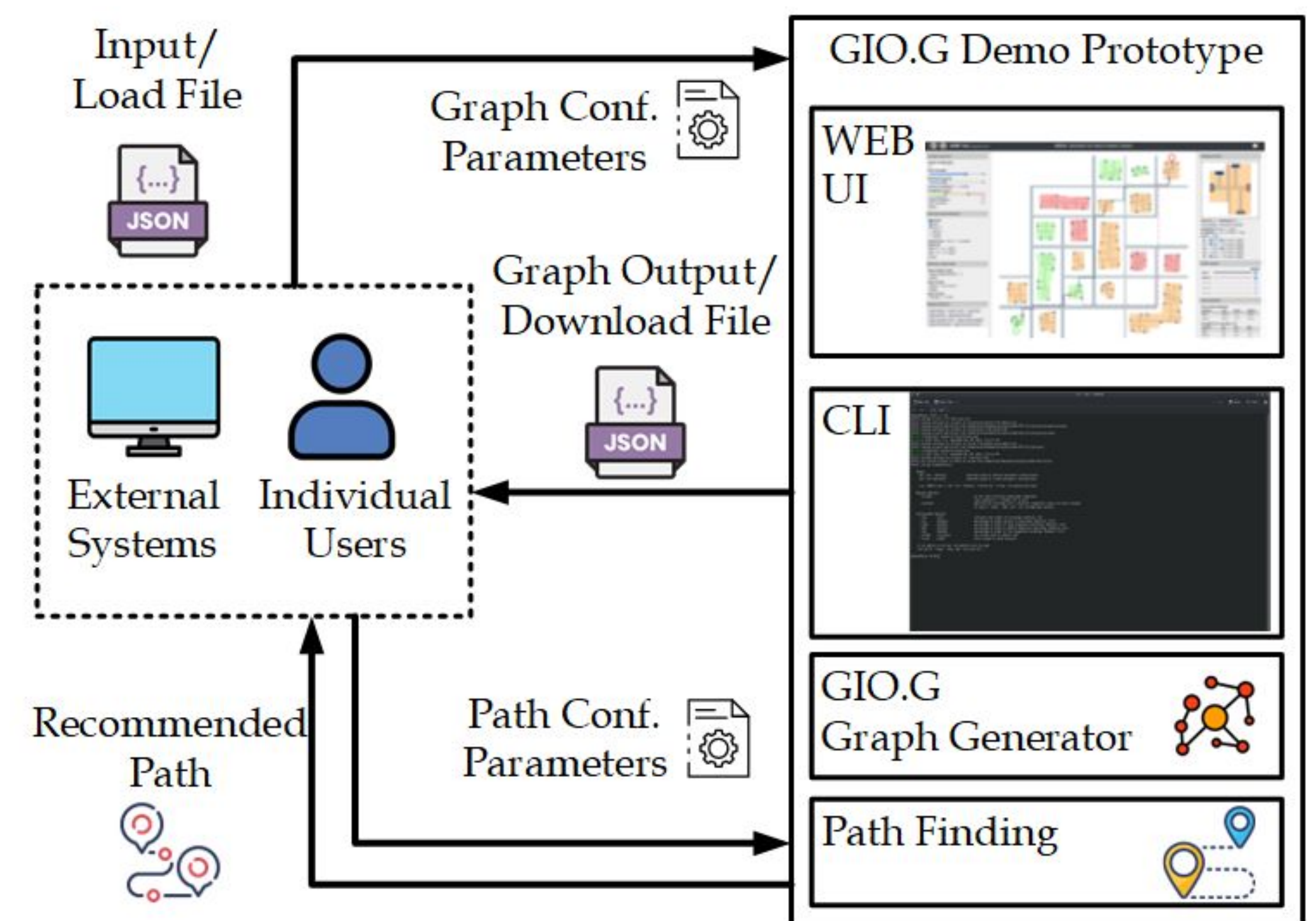
Department of Computer Science, University of Pittsburgh, *Rinnoco Ltd.

Motivation

- There is a distinct lack of usable, publicly available, **pedestrian-focused datasets of urban environments**.
- As an individual, it is extremely time- and labor-intensive to create these datasets.
- GIO.G** fills this gap by enabling the creation of Indoor-Outdoor graphs simulating an Urban Environment.

GIO.G Demo

- Web Interface:**
 - Enables the user to send configurations to GIO.G, edit existing graphs, or interact with applications
- GIO.G:**
 - Takes a user given graph configuration and returns a possible Indoor-Outdoor graph and foot-traffic data
- Path Finding Application:**
 - Example application of GIO.G and Indoor-Outdoor Graphs



Graph Configuration

- GIO.G uses a number of **user-defined environmental parameters to randomly model a possible Indoor-Outdoor Graph**.

The screenshot shows the 'Graph Generator' interface with the following settings:

- Number of Buildings: 25
- Grid Coverage: 75%
- Building Clustering: 15%
- Constant Congestion: ☐ Enabled
- Congestion Levels: 30% Low Congestion, 40% Medium Congestion, 30% High Congestion
- Submit button

Graph Editing

- Buildings can be **added, deleted, or merged**. Building entrances can be **added, deleted**, set whether it is **accessibility-friendly** or not.

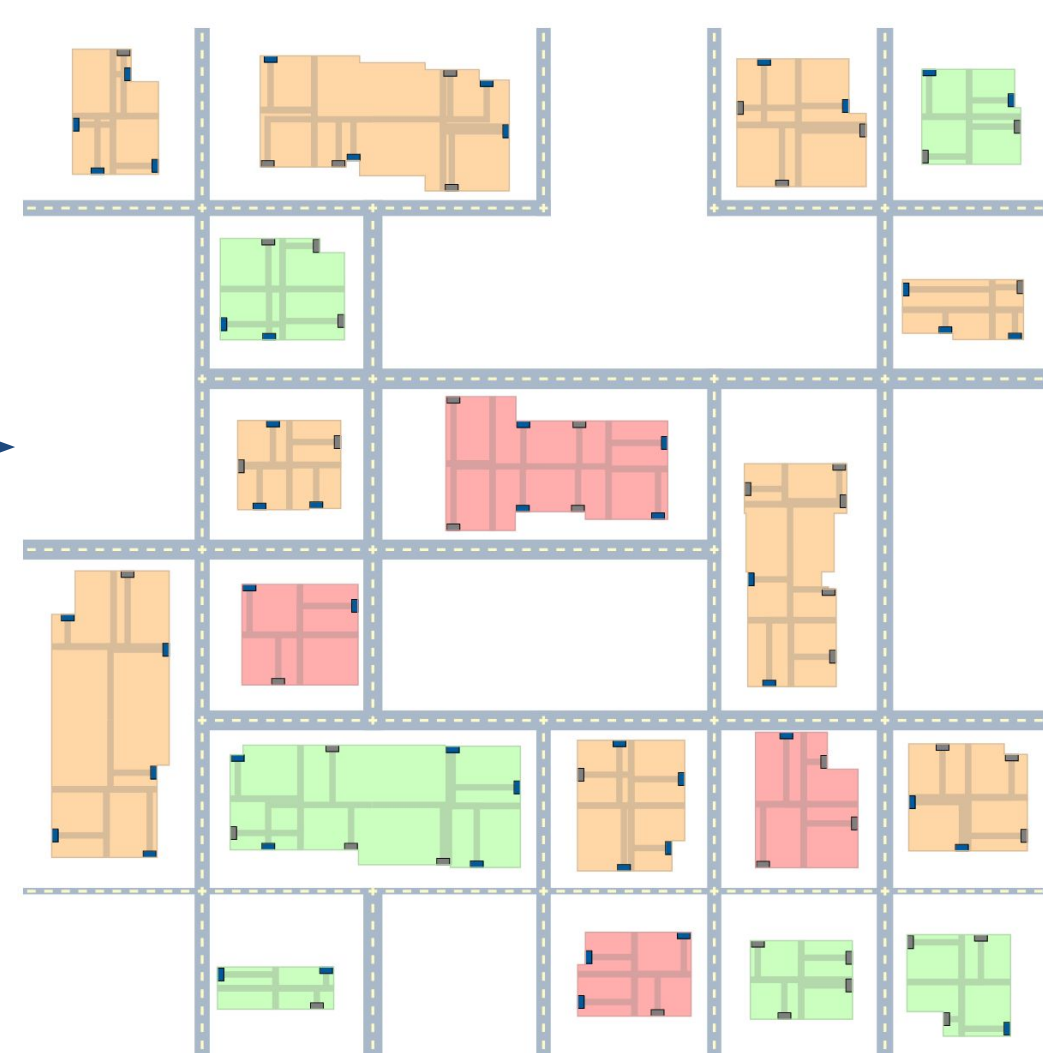


Example Application Workflow

Step 1: Generate Graph



Step 2: Edit Graph



Step 3: Run Application



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