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# **Gaia leastcostpath Plugin Documentation**

***Release 0.1.0***

**Gaia Developers**

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This is a plugin for Gaia (<https://github.com/OpenDataAnalytics/gaia>) that calculates the least cost path between two points over a raster surface. Least cost path analysis calculates the most cost-effective route between a source and destination. Cost can be a function of elevation, time, or any other criteria that is represented as values on a raster grid, where a higher value indicates a higher cost. As part of the analysis, the 8 neighbors of a grid cell are evaluated and the path moves to the cell with the smallest value. This evaluation is repeated until the source and destination are connected. The output is a vector line that connects the source and destination points.

An example of how to use this plugin can be found [here](#).



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# Installation

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- `git clone https://github.com/OpenDataAnalytics/gaia-leastcostpath-plugin.git`
- `cd gaia-leastcostpath-plugin`
- `pip install -e .`
- `pip install -r requirements`





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### Testing

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- `pip install -r requirements-dev.txt`
- `python -m unittest discover`



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## Expected Inputs

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NOTE: This will change in the near future to accept standard GaiaIO class instances as inputs.

Currently the input must be a dict in the form of:

```
{
  "uri": <filepath of raster image>,
  "start": (longitude, latitude),
  "end": (longitude, latitude)
}
```



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**4.1 gaia\_leastcostpath package**

**4.1.1 Submodules**

**4.1.2 gaia\_leastcostpath.processes module**

**4.1.3 Module contents**



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