

---

# **Gaia leastcostpath Plugin Documentation**

*Release 0.1.0*

**Gaia Developers**

October 29, 2016



<b>1</b>	<b>Installation</b>	<b>3</b>
<b>2</b>	<b>Testing</b>	<b>5</b>
<b>3</b>	<b>Expected Inputs</b>	<b>7</b>
<b>4</b>	<b>Table of Contents</b>	<b>9</b>
4.1	gaia_leastcostpath package . . . . .	9
	<b>Python Module Index</b>	<b>11</b>



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](#).



---

## Installation

---

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



---

**Testing**

---

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



---

## Expected Inputs

---

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)
}
```



---

**Table of Contents**

---

**4.1 gaia\_leastcostpath package**

**4.1.1 Submodules**

**4.1.2 gaia\_leastcostpath.processes module**

**4.1.3 Module contents**



**g**

gaia\_leastcostpath, 9



## G

`gaia_leastcostpath` (module), 9