Citations

Referance 1: Visualization of graphs and shortest paths using NetworkX

NetworkX is a Python language package for exploration and analysis of networks and network algorithms. The core package provides data structures for representing many types of networks, or graphs, including simple graphs, directed graphs, and graphs with parallel edges and self-loops. The nodes in NetworkX graphs can be any (hashable) Python object and edges can contain arbitrary data; this flexibility makes NetworkX ideal for representing networks found in many different scientific fields. In addition to the basic data structures many graph algorithms are implemented for calculating network properties and structure measures: shortest paths, betweenness centrality, clustering, and degree distribution and many more.

```
@InProceedings{SciPyProceedings_11,
  author =       {Aric A. Hagberg and Daniel A. Schult and Pieter J. Swart},
  title =        {Exploring Network Structure, Dynamics, and Function using NetworkX},
  booktitle =   {Proceedings of the 7th Python in Science Conference},
  pages =     {11 - 15},
  address = {Pasadena, CA USA},
  year =      {2008},
  editor =    {Ga\"el Varoquaux and Travis Vaught and Jarrod Millman},
}
```

Referance 2: Shortest path finding algorithms (A*)

A* is not only admissible but optimal, in the sense that no other admissible algorithm expands fewer nodes.

In this sense, we claim that A* is an optimal algorithm. Compared with other no more informed admissible algorithms, it expands the fewest possible nodes necessary to guarantee finding an optimal path.

In fact, A* expands no more nodes3 than any admissible algorithm that uses no more information from the problem domain; viz., the information that a road between two cities might be as short as the airline distance between them.

```
@ARTICLE{4082128,
author={Hart, Peter E. and Nilsson, Nils J. and Raphael, Bertram},
journal={IEEE Transactions on Systems Science and Cybernetics},
title={A Formal Basis for the Heuristic Determination of Minimum Cost Paths},
year={1968},
volume={4},
number={2},
pages={100-107},
doi={10.1109/TSSC.1968.300136}}
```

Referance 3: Shortest path finding algorithms (UCS)

Uniform-cost search is complete and is cost-optimal, because the first solution it finds will have a cost that is at least as low as the cost of any other node in the frontier. Uniform-cost search considers all paths systematically in order of increasing cost, never getting caught going down a single infinite path.

```
@book{DBLP:books/aw/RN2020,
  author    = {Stuart Russell and
               Peter Norvig},
  title     = {Artificial Intelligence: {A} Modern Approach (4th Edition)},
  publisher = {Pearson},
  year      = {2020},
  url       = {http://aima.cs.berkeley.edu/},
  isbn      = {9780134610993},
  timestamp = {Wed, 20 Apr 2022 13:29:51 +0200},
```

```
  biburl    = {https://dblp.org/rec/books/aw/RN2020.bib},
  bibsource = {dblp computer science bibliography, https://dblp.org}
}
```

Referance 4: OSM data reliability

OpenStreetMap (OSM) has emerged as a global project and community operating with the objective of creating and maintaining a free and editable database and a map of the world based on the contributions of volunteer mappers. With its database including almost 7.5 billion data points (nodes), contributed by approximately 1.8 million users as of March 2022, it is perhaps the most accomplished example of a crowdsourced geoinformation project and of the concept of volunteered geographic information.

```
@Article{ijgi11040230,
AUTHOR = {Grinberger, A. Yair and Minghini, Marco and Juhász, Levente and Yeboah, Godwin and Mooney, Peter},
TITLE = {OSM Science&mdash;The Academic Study of the OpenStreetMap Project, Data, Contributors, Community, and Applications},
JOURNAL = {ISPRS International Journal of Geo-Information},
VOLUME = {11},
YEAR = {2022},
NUMBER = {4},
ARTICLE-NUMBER = {230},
URL = {https://www.mdpi.com/2220-9964/11/4/230},
ISSN = {2220-9964},
ABSTRACT = {This paper is an Editorial for the Special Issue titled &ldquo;OpenStreetMap as a multidisciplinary nexus: perspectives, practi
DOI = {10.3390/ijgi11040230}
```