Traffic Networks Become Argumentation Frameworks

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We provide a generator which transforms graphs to abstract argumentation frameworks (AFs) [1], together with benchmarks produced using the generator. Given an input graph G, the arguments in the AF constructed by the generator are exactly the same as the vertices in G. Regarding the attacks, given an edge (a, b) in G and a probability p of there being symmetric attacks (a further input to the generator), the generator first decides, based on p, whether there will be an attack from both a to b as well as b to a in the resulting AF. If not, one of a or b is randomly chosen to attack the other argument.

The graphs used to produce the AFs in our benchmarks are obtained from publicly available real world mass transit data [2] of cities, metropolitan areas or countries. The transit feeds are provided by various transit agencies, e.g. [3] following the General Transit Feed Specification (GTFS) and converted to graph formats using [4].

In addition to the generator we provide 600 AFs obtained from traffic networks as described above, 200 for each probability of symmetric attacks among 0.2, 0.5, and 0.8.

References

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