Bachelor Project sketch

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Title: Optimizing Semantic network search navigation and memory use with evolutionary agents

Abstract:

In the massive data environment of the Semantic Web, can effective search strategies for entailment using an evolutionary agents optimizing navigation strategy given a finite memory size be found, and can we map the tradeoff between memory use and entailment results?

Hypothesis:

When using evolutionary agents to optimize navigation, increasing memory capacity will have asymptotically diminishing returns on entailments generated.

Evaluation:

Run evolutionary algorithm over large semantic dataset, using amount of entailments generated as fitness score. Optimize on navigation. Then repeat this using different memory sizes as parameter. Compare how much better the fittest evolutionary agents perform given increased memory. Then plot memory use against performance.