

4511W, Spring-2019

WRITING ASSIGNMENT 1 :

**Assigned: 02/11/19 Due: 02/17/19 at 11:55 PM** (submit via Canvas) Submit only a pdf

## Written

For this assignment you are asked to read the following paper discusses bidirectional searches and heuristic searches (specifically A\*):

<http://www-users.cselabs.umn.edu/classes/Spring-2019/csci4511W/assignments/LimitBiDir-barker2015.pdf>

Write an approximate 2 page summary and analysis of the paper. You **must** answer the first set of three questions as part of your analysis. I then provide some ideas on other ways to analyze the paper. These later questions are just suggestions and you do not need to answer any if you do not wish to, but you do need to go beyond answering just the three required questions. You may analyze the paper in whatever manner you find interesting, but you must demonstrate significant critical thinking.

Answer the following questions and provide justification:

- The paper often refers to a “bidirectional brute-force search”. What algorithm is this (we called it by a different name)?
- What do “weak” and “strong” heuristics mean?
- The authors say this sentence: “As expected, fewer nodes are expanded with successively stronger heuristics, and the nodes not expanded are the deepest.” What ambiguity is in this sentence? How would you rephrase it better?

Some suggestions on what to summarize/analyze:

- What is most missing from this paper?
- What assumptions do they make about the environment or agent?
- What novel contribution does this paper provide?
- How does this paper relate to other people's work?
- Are there any drawbacks to the approach?
- How strong are their conclusions?
- Is the justification sufficient?
- What other areas could use justification?
- Is their procedure clear? Could you implement their algorithm?
- Is the paper clear and concise?

When answering the above questions, you should avoid quoting the author's of the paper (i.e. use your own words). If you are going to quote anything specific, make sure you cite the source (i.e. the authors). You should refrain from simply rephrasing what the authors said.

The writing must be done in LaTeX and the resulting pdf submitted. ShareLatex/Overleaf is a website that allows you to write a “tex” file and view the resulting pdf in a web-browser. This eliminates the need to download Latex (though it is on the CSE labs machines), but requires you to register (personal accounts are free).

<https://www.sharelatex.com>

A sample LaTeX file is provided here (and resulting pdf):

<http://www-users.cselabs.umn.edu/classes/Spring-2019/csci4511W/assignments/sample.tex>  
<http://www-users.cselabs.umn.edu/classes/Spring-2019/csci4511W/assignments/sample.pdf>

For a tutorial on LaTeX, try google or here:

<http://www-users.cselabs.umn.edu/classes/Spring-2019/csci4511W/misc/4511LatexGuide.html>

Grading:

- 20% Succinct summary
- 20% Depth of analysis for required questions answered
- 20% Depth of other analysis
- 20% Writing clarity
- 20% For using latex