Fall 2023 - CSC751 Semantic Web - Assignment 1

Due date: from 8/31, 2023, 11 am, presentation in class.

In this assignment, we aim to assess your comprehension of the *Semantic Web and technologies*. Please ensure your submission is made by August 31^{st}, prior to the commencement of the class.

1. (1 point) Please describe the purpose of the Semantic Web in your own words.
2. (2 points) We have learned that the Semantic Web provides a conceptual framework to solve the prior problem with three different components (building models, computing with knowledge, and exchanging information). Describe each component and convince us that the combination of these three components provides a solution to the problem.
3. (2 points) Is it possible for an agent in the properly designed Semantic Web to contain human-level intelligence? Elaborate on this topic (*hint: [BLHL01]*, download paper here).
4. (3 points) What is the outcome of the 2016 papers on a new look of the Semantic Web? (*hint: [GS16, BHN16]*, download papers here and here). What does the review of the Semantic Web from 2021 [Hit21] reveal? (download paper here).
5. (2 points) We have talked about Semantic Web for a bit. But what about *semantic technologies?* Semantic Web is realized through semantic technologies. Describe how it is realized. (*hint: knowledge representation, and reasoning*).

References

[BHN16] Abraham Bernstein, James Hendler, and Natalya Noy. A new look at the Semantic Web. *Communications of the ACM*, 59(9):35–37, 2016.

[BLHL01] Tim Berners-Lee, James Hendler, and Ora Lassila. The Semantic Web. *Scientific American*, 284(5):34–43, May 2001.

[GS16] Birte Glimm and Heiner Stuckenschmidt. 15 Years of Semantic Web: An Incomplete Survey. *KI - Künstliche Intelligenz*, 30(2):117–130, 2016.

[Hit21] Pascal Hitzler. A Review of the Semantic Web. *Communications of the ACM*, 64(2):76–83, February 2021.