

Homework 1 - Cultural Assignment

Due: February 4

Overview

Data structures and algorithms is a foundational computer science course, forming the basis of many advanced concepts in the field. Without this study, computer science and engineering would not be what it is today, and computers would not be able to play such a critical role in daily life. Recognizing this, many companies actually draw content from this class for technical interviews.

However, as with many foundational courses, it can be difficult to see the direct relationship between the topics we cover in class and the impact of technology in our daily lives. In this assignment, you will be watching a video about real-world applications of algorithms or reading a recent technical paper related to our class. You can then submit either a written report or meet with the instructor to summarize the experience.

Tasks to Complete

You may choose to do either option A or B below. **You don't need to do both!**

- A. Watch "The Secret Rule to Modern Living Algorithms."

This is a BBC documentary about the role of algorithms in everyday life. It uses interesting visuals and examples to communicate a number of useful concepts. A simple way to watch it online is using the link [tx.ag/algodoc](https://www.bbc.com/1/health-55848488).

- B. Read an IEEE or ACM conference or journal paper published since 2017 related to the topics of data structures or algorithms.

This is a dynamic field where advancements are continuously made and new findings are shared. You can easily find many relevant papers by using the [IEEE Explore](#) search function or the [ACM Digital Library's subject search](#). These have the ability to find key terms if you are interested in looking up a specific topic or if you just want to generally search something like "sorting algorithms." Both have the ability to constrain the results to within the last 5 years.

Ask the instructor if you have any questions about finding a paper to read!

What to Submit

Regardless of whether you watched the video or read a paper, you must choose either option 1 or 2 below to complete the assignment. **You don't need to do both!**

1. Schedule and meet with the instructor for 10 minutes to discuss the assignment.

One goal of this assignment is for me to learn more about you. I'm hoping to have the opportunity to meet with many of you to hear about yourself and discuss your thoughts

on the video or paper and the field in general. This can also be a time to share what may interest you about the course so I can try to cover some popular topics if possible.

Under this option, no report needs to be submitted to Canvas; it will be assigned a score after the meeting.

You can book an in-person or remote meeting by visiting calendly.com/spolsley.

2. Write a 1- to 2-page, double-spaced report about the assignment.

Include your name, section number, the date, and a title at the top.

The first few paragraphs should consist of:

- A summary of the paper
- A description of the data structure or algorithm being referenced in the paper and how it is implemented
- What you thought about the paper and what you learned from reading it

Finally, in lieu of an individual meeting with the instructor, write a tiny bit about yourself so I can get to know you! This can be short but should answer the questions:

- What CSCE courses have you taken?
- How much programming and C++ experience do you have?
- What interests you about computer science and engineering?
- What interests you about this class?
- What do you plan to do with your degree in the future?

Submit the report to Canvas when completed.