

CS575 Practicum on CS Theory in Practice

Table of Contents

COURSE DESCRIPTION FROM THE MIU CATALOG	1
INSTRUCTOR/GRADER.....	1
COURSE EVALUATION.....	1
SUBMIT YOUR PRACTICUM REPORT VIA SAKAI	ERROR! BOOKMARK NOT DEFINED.
RESOURCES FOR THIS COURSE.....	2
THE STAR REPORT ON CS THEORY IN PRACTICE	2
<i>Situation</i>	2
<i>Task</i>	2
<i>Actions</i>	2
<i>Results</i>	3
EVALUATION RUBRIC FOR THE STAR REPORT ON CS THEORY IN PRACTICE	4

Course Description from the MIU Catalog

In this practicum course students perform computer-related tasks in a technical professional position. The tasks performed may be in the design and development of new systems or the application of existing systems for specific purposes. Practicum job descriptions are formulated prior to employment by the employer and the student, and course registration requires approval in advance by the Computer Science department. To complete this course, students reflect on their experience in the current or recent semesters and relate, in detail, an example in which they had to use appropriate concepts and theories in CS to frame a problem, conceive a solution, and implement the solution efficiently using appropriate data structures and algorithms. Students write up their case as a STAR report that they can draw on for future technical solutions. (1–3 credits, may be repeated for credit, subject to satisfactory progress in the previous course and a clear plan for the progression of learning in the subsequent course) *Prerequisite:* written authorization.

Instructor/Grader

Your instructor/grader for this course is your faculty advisor in the Computer Science Department.

Course Evaluation

This course is graded P/NP (Pass or No Pass). A minimum of 70% is the passing grade effective with Spring B 2022.

Students must submit a 1,000-word STAR report by the end of the course. Please refer to the description of the STAR report, below, and read the Evaluation Rubric for a STAR Report in this syllabus. Your STAR report will be very useful to you as an example that you can summarize when answering questions in a future job interview.

We recommend that students submit a draft of their STAR report four weeks prior to the end of the course.

Submit Your Practicum Report via Sakai

You will submit your 1,000-word practicum STAR report and do not copy from your own previous report(s), using the Sakai LMS system and your usual login procedure.

<https://online.cs.miu.edu/>

Resources for this Course

Please refer to the syllabi of your courses in the MS in Computer Science.

The STAR Report on CS Theory in Practice

Every day, as a computer professional, you apply the theory of computer science to practical problems. In this practicum course, you will reflect on your experience of solving computer science problems and thereby better understand the theory of computer science that you use.

The following outline explains the content of each part of the report in terms of the S-T-A-R elements.

If you write less than 1,000 words on one problem, you may add a second problem to your report and give a complete S-T-A-R account of it. Include a header for each of the four sections: **SITUATION; TASK; ACTION; RESULT.**

Situation

Start by describing the company you are working for and your place in it. What is the company's main line of business? What division or department do you work in? How many employees are there in your department? How many people are in your work group, whom you interact with regularly? Who is your supervisor, and what is his/her job title? What is your job title? How long have you been in that job?

If your work is contracted to another firm, a client of your employer, then describe the client firm as well.

Task

Think of a task in which you applied the theory of computer science to solve a practical problem. Describe in detail the task that you (or your work group) were given. What were you or your work group being held responsible to do? Was there a deadline for completion? If the task was a team effort, describe your role in the team and how your work related to that of other team members.

Actions

Describe how you approached this task:

What more information relevant to the task did you have to assemble, and where or how did you get that information? This question is about the data needed in constructing a solution to the problem.

How did you “frame” or interpret the problem, in terms of the type of computer science problem you had to solve, or (if more than one) the types of problem embedded in a larger task. What were the clues that revealed the type of problem you had to solve? Which ideas and courses in your MS-CS program guided you in this approach? Identify other sources of knowledge, if appropriate, that you used from outside of your MIU courses or as a part of your practicum experiences to help you frame this problem.

What existing tools were you able to use, and what software designs or tools did you locate for this usage, or that needed to be modified or designed and built especially for this problem? What was involved in this process?

How difficult was the problem to solve? Comment on the creative intelligence that you needed to bring to this problem in order to find a solution.

Results

Describe the results of your work.

How long did the task or project take to complete? What were the steps involved, and the success of each? Was it completed on time?

How did you or others evaluate the effectiveness of your work as a solution to the original problem? How effective was your solution?

Were other people involved in your solution or work on this? If so, were others in your group or area aware of your results or success on this task?

Can you quantify any benefits gained by your employer (or client) as a result of your work?

Evaluation Rubric for the STAR Report on CS Theory in Practice

	Grade →	4.0	3.5	3.0	2.5	2.0	1.5	0
Wt	STAR (SLO)	Excellent		Good		Fair		NC
C1 10%	Situation	Clear and complete description of the project or client for which the work was done and the goal or for which it was done.		Describes the project or client and its purpose but not its relation to the overall goals.		Names the project or client but does not describe its purpose.		
C2 20%	Task (#1b)	Describes in detail the problem to be solved and the requirements for a solution.		Describes the problem but with some ambiguity about the requirements for solution		Description is focused on the solution, not on the problem or requirements for solution.		
C3 20%	Action (#1a)	Explicitly uses appropriate concepts and theories in CS to interpret the problem		Refers to concepts and/or theories but does not clearly relate them to the specifics of the problem.		Mentions concepts or theories but does not relate them to the specifics of the problem.		
C4 30%	Action (#1c)	Describes in detail the solution of the problem relating it to the concepts and methods of the CS courses.		Describes the solution of the problem in a general manner, but not the specific methods of the solution.		Gives only a general description of the solution or approach.		
C5 10%	Action (#5b, #5c)	Reflects explicitly on the creativity and intelligence required to solve the problem.		Comments on the creative elements of the solution.		Shows very little recognition of the creative element in the solution.		
C6 10%	Results	Explicit, clear and complete statement about the results of the actions, e.g.: project met a deadline, or necessary extension was shortened; money saved; work product met or did not meet client's expectations; etc.		Reasonably complete statement about the results of the actions.		Incomplete statement about the results of the actions.		