Machine Learning (Spring 2023)

Instructor: **Elhamifar, Ehsan**

Subject: **CS**

Catalog & Section: **6140 01**

Course ID: **31393**

Objectives:

Enrollment: **82**

Responses Incl Declines: **50**

Declines: **2**

Instructor Related Questions: Ehsan Elhamifar (58 comments)

Q: What were the strengths of this course and/or this instructor?

1 Explains very well.

2 Professor Elhamifar was excellent in teaching the concepts, and matching it to the homework given. While a struggle early on to adapt to the math notation, I found myself able to keep up through class, and rewatching previous year lectures.

3 Professor Elhamifar comes to lecture very well prepared and presents information very clearly. He is happy (even enthusiastic) to answer questions both on the class material as well as real-world applications and current methods.

4 Very knowledgeable professor and knows how to convey that. Each concept is taught in-depth and it helps to understand it all much more

5 Professor Elhamifar is very knowledgeable and passionate about the topic of Machine Learning which made for good lectures. He also answered any question that was asked, which was great.

A couple of times he misinterpreted genuine questions for posturing and mocked the person asking the question with a sarcastic response. However, that was about 3 times out of 100s of questions.

The notes Professor Elhamifar wrote on the board were very detailed and extremely helpful for doing the homework assignments and studying for the final exam. As mentioned before, I appreciate that he posted his own personal notes as well.

There was no reading for the course, and I don't feel any was needed. This was nice because it saved me time. I don't know that I would've had time to do reading for this course.

I think the final exam was fair. I felt I did well on it. I appreciated that we were allowed a two-sided typed "cheat sheet".

Also, having the old lectures posted on Piazza was very helpful. I definitely watched a few to help me with the homework.

I like the grade breakdown of the course. Having been a teacher before myself, I believe that the true measure of a student's understanding comes from assignments where they have more time to go deep into a topic. Thank you for making a grade breakdown that reflects that!

Also, Professor Elhamifar has a great sense of style in his attire!

6 Lectures well, knows his stuff, explains things clearly with good depth.

7 So good and detailed proofs, I took ML for couple times, I liked this version a lot.

8 machine learning is interesting and valuable
the programming assignments were helpful for quickly getting practical use out of the course material

9 The knowledge of the professor about the subject.

10 The professor is extremely knowledgeable about machine learning and can answer any question you might have. I also appreciate how he spent time reviewing the foundational math of ML so that we were all on the same page.

11 Ehsan knows the material backwards and forwards and is good at answering questions in class.

12 Prof has excellent knowledge in the domain

13 Subject knowledge and practical (relevant and relatable) experience

14 Strong math foundation

15 He taught every topic in the framework of. this is the solution. and here's the solutions drawback. AMAZING.

16 This is a great course to introduce and learn about a broad range of machine learning methods. I really liked how it was laid out (the structure of the topics), the professor did a very good job of showing how each leads into the next. Pretty fast paced but I didn't find it overwhelming.
Professor Elhamifar knows the content well and is very efficient with class time, thought the lecturing was very effective. Also very happy to answer students' questions during class

17 The instructor is really good. Nothing much to complain except but the course would have been better if more topics were covered.

18 I loved how the professor patiently answered each question in the class and gave a practical application and information on the topics discussed.

19 the course is very in depth and covers a wide range of materials. Dr. E is very knowledgeable and enthusiastic about teaching the material. He quickly dives into the material and is very willing to back track to answer questions from students.

20 The class notes are helpful for the analytical homework.

21 The course was well organized and informative. The professor taught every concepts in detail and always encourages us to ask doubts in class which was very helpful.

Q: What could the instructor do to make this course better?

1 The recordings could have been made available after the class immediately

2 Small coding lectures in class could go a long way I believe. While the class syllabus is jam full of material already, maybe a class devoted to explaining PyTorch could be useful.

3 For future iterations of the course, I'd suggest recording lectures if possible. Otherwise, I felt that the course did not go deep enough into the material. However, I suspect that Professor Elhamifar has adapted the material over the years based on student responses.

4 It would be a huge help if Professor Elhamifar took notes live in class on a tablet and then posted them after class. I understand he may write on the board to ensure people come to class, but it makes it hard to listen and digest the content when I have to take notes the entire time.

On homework 1 and 4 we got "free points", which indicate that we didn't do well on them as a class. I'd rather have a more realistic level of difficulty on an assignment then receive "free points". Especially the last homework could've been toned down. I think we can learn how to use Neural Nets in Python without the level of intensity I experienced. This said, homework 2 and 3 were reasonable.

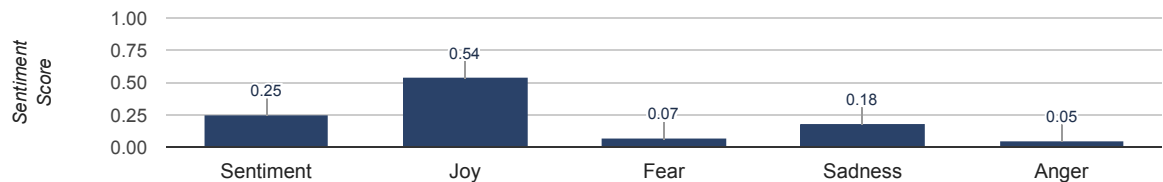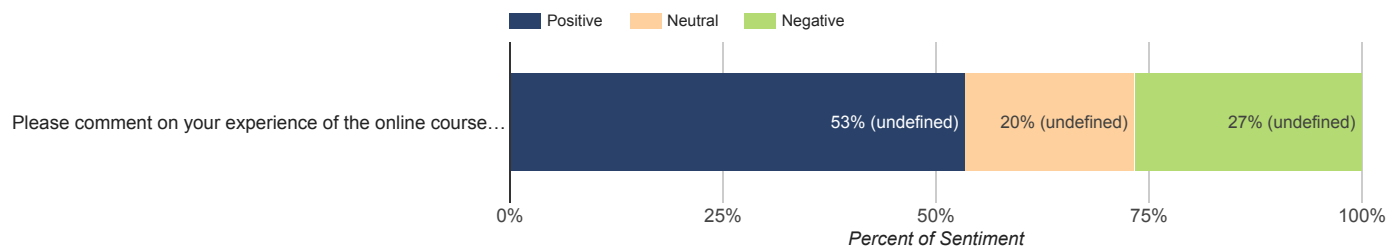## Q: What could the instructor do to make this course better?

5   Students will ask questions that leave others (who aren't as knowledgeable) behind - which is fine. But the time taken to answer these (very valid) questions thoroughly during class took away form learning more.

6   Your step by step proofs are very easy to follow, please always ask to teach this class where you can record the blackboard. That would be perfect.

7   class note pdfs could be labeled by topic,
providing a syllabus,
a glossary of notations used in the class- there are many similar notations, sometimes used inconsistently,
assigning more challenging group homework rather than individual homework that the class all gets 98 on
beginning lectures with a purpose before explaining the math rather than doing an hour of derivations and explaining why we did them at the end

8   Make it more practical as most of the theory is just derivations and theories which are hardly useful anymore.

9   Online recordings of lectures should be mandatory.

10   Include more programming exercises.

11   We didn't have a real syllabus which was frustrating at the beginning of the course. There should also be a list of resources for further learning.

12   Just have a firm schedule and post it on canvas.

13   Record classes

14   Live recordings

15   pre-record certain topics using his ipad to teach, especially ones which are difficult to grasp for non DS students.

16   I was a little stressed leading up to the final exam because I was not sure what it would be like. Perhaps a little more information about that earlier on would have been nice. But in the end, it was similar to the non-programming homework assignments and sample questions.

17   Include more topics in the syllabus.

18   Additional resources and research papers could be discussed in a few classes that showcase recent advancements in these topics.

19   I think it would be more beneficial to start at higher level ideas at the beginning of each class and how they interact with each other than immediately dive into the minute detailed math. This was best demonstrated with clustering and would have been really helpful with the previous material.

20   It would be useful to have a syllabus or schedule that had weekly topics and assessments, rather than the single slide we got with the due dates of only the project and final exam.

21   I feel that the course goes over all the topic so fast. It seems that the professor assumes that we already know the contents and this course is just a review, even though it is the first time I learn about ML. I cannot preview a class and bring questions because syllabus does not indicate topics of each lass. I feel that giving us the topics beforehead might be helpful. I also feel that we are not given enough resources to help us succeed in the class. A lot of machine learning tasks require access to a GPU, such as discovery. But not everyone has access to these resources, and we are not instructed on how to use them. Maybe giving us some tutorial on the available computation resources at NEU is helpful.

22   The class could be recorded so that we can watch it later for revising the concepts.

Q: Please expand on the instructor's strengths and/or areas for improvement in facilitating inclusive learning.

1   Explains the concepts very well.

2   Homework was a perfect level of difficulty that required me to review notes and attend office hours weekly, without being so difficult I felt I was lost.

3   Excellent instructor

4   Adding live class notes to Piazza after class and being more tempered in his response to the 3 question he snapped back on are the only real improvements for inclusive learning.

Generally Professor Elhamifar is patient with folks who are having a hard time understanding a topic. I don't think I ever saw him not answer a question all semester. He normally takes the time to explain something thoroughly if someone isn't understanding a concept.

Overall I found the material interesting and appreciated Professor Elhamifar's teaching style. I don't know that I will work solely in Machine Learning, but feel able to handle it tangentially in the workplace.

As Professor Elhamifar seems like a relatively young professor, I hope he keeps his patience, compassion, and teaching style as time goes on!

5   piazza and other students are a good resource for learning a new topic

6   The grip on the subject is the strength and making the course more practical and up to date would be more beneficial.

7   This was a good course, but I think the professor could zoom out a little bit and talk about applications of machine learning rather than just focusing on the math, which I understand is important to the subject. For example, we should learn more about why we use certain models over others and do more coding assignments with real-world applications.

8   Could help review if classes are recorded

9   Excellent theoretical and mathematical understanding of ML

10   He is concise, clear and effective at teaching. The course is tailored to match the students in class. Loved it.

11   The professor is knowledgable and helpful during class discussions, will try to understand a students' question before answering. But also seems quite busy with other things, so sometimes outside of class it mostly felt like it was between me and the TAs. That was fine overall. Really enjoyed the lectures

12   Good at teaching, good at clarifying my questions. Nothing to complain.

13   Post and provide a syllabus.

14   I wish I could practice more on how to program NN with pytorch. The hw and project expect us to write nn with pytorch from scratch, however, these are not taught or practiced in class. The course materials are not helpful towards completing the programming homeworks. Maybe providing some practice examples in class would help.
I also feel that having to prepare for both an exam and a term project is too much. I am a phd student, so I have lab tasks aside from another class. The expectation that I can devote 10 hours every week to this class is unrealistic. I was overwhelmed when working on the final exam and the project for this class, while having final exam for another class. I think choosing one between the exam and the project is enough to evaluate the student's knowledge about the course materials.

15   The professor came prepared and explain every concept in depth. The assignments can be made more application based and can contain more programming question along with theoretical questions.

Questions to Assess Students' Online Experience (15 comments)

Q: Please comment on your experience of the online course environment in the open-ended text box.

Legend: ■ Positive ■ Neutral ■ Negative

Please comment on your experience of the online course… | 53% (undefined) | 20% (undefined) | 27% (undefined)

Percent of Sentiment

Sentiment Score chart:
- Sentiment: 0.25
- Joy: 0.54
- Fear: 0.07
- Sadness: 0.18
- Anger: 0.05

1. Very good course. Learnt the basics very well. ★★★★★

2. Piazza being used was good, but felt it would be useful to have a more robust syllabus and policies for the class. ★★★★★

3. The degree to which the course was online was rather small. However, those components that were online (lecture notes, previous lecture recordings, and Piazza Q&A forum) complemented in-person components well. ★★★☆☆

4. I didn't ask many questions via Piazza, but I saw students and TAs answering in a timely fashion there.

    Main room for improvement is with the notes posted online. I appreciate that Professor Elhamifar posts his personal notes, but it would be great if he wrote on a tablet live in class and then posted those afterwards. Sometimes, Professor Elhamifar's notes aren't as detailed, which means I have to spend class taking notes instead of listening and understanding what's happening in class. ★★★★☆

5. online course materials were minimal- there was no syllabus, class notes were handwritten in pdfs labeled just by the date, sometimes with mistakes and unclear notation ★★☆☆☆

6. It was good ★★★★★

7. Piazza was fine and it was nice to have his posted lectures and notes, which were well organized. ★★★★★

8. I really hate the concept of using Piazza for everything.
   If there is an assignment that everyone must do, I think there should be a post about it on the official canvas.
   If there are resources or files, I would prefer them to be on canvas.
   If something is going to be due at a specific time in the course, I would prefer it to be listed on the syllabus, on canvas and not just mentioned a single time in class and in a single piazza post a few days before hand. ★★☆☆☆

9. Neutral ★★★☆☆

10. The professor's recorded videos need voice enhanced or a microphone for future. They were very difficult to follow and distracted me because of the muffled voice. ★☆☆☆☆

11. The lectures were in-person, but Piazza was used for getting help, some office hours were online, and slides/videos were uploaded of past lectures for additional reference. Pretty standard but good ★★★★

12. Video recordings of lectures could have been of better quality. The audio and video quality could have been better. ★★★★☆

13. When the professor post his class notes they were helpful if you had not been to class but if you had were just a rehash of the class notes. There wasn't much additional material gained. The professor also didn't regularly post his lecture notes just occasionally. There was also no course website, posted syllabus, or real use of canvas. Piazza was ok but not really that helpful other than being able to retrieve the few bits of online material made available. ★★☆☆☆

14. NA ★★★☆☆

15. Online course environment is good. The professor posted lectures online and assignment submission is also smooth through canvas. ★★★★★

Student Self-Assessment of their Effort to Achieve Course Outcomes (14 comments)

Q: What I could have done to make this course better for myself.

1. The assignments could have been more challenging. Like coding questions could have been better. It could be asked in pytorch.

2. Better review of math and algebra concepts before beginning class. I had a lot of math to catchup on.

3. I didn't use all the time provided on Homework 4. I definitely should have. It was very challenging.

4. Nothing - I did exactly what I needed to do. Have more hours in the day? Have a better background in statistics? Remember more from my linear algebra days?

5. I would say focus on more on the theory part.

6. This course needs online lectures that are recorded clearly. We were provided ones from a previous term but the audio is not good.
   This course is dense. If you miss a single class its hard to bounce back and especially since covid it should be mandatory to have online recordings. The lecture notes provided are not as useful as they lack a lot of context.

7. Started studying for the final earlier.

Q: What I could have done to make this course better for myself.

8   I had explicitly taken notes in lecture more regularly. I generally work and learn better by working through chapters of a text book.
     That is not an option in this class. You have to just work through Ehsan's hand written notes, or your own notes you have from class.

9   Organize notes

10   N/A

11   Occasionally I could have asked for help sooner to clarify some homework problems

12   I would have needed to retake an undergraduate calculus class to catch up mathematically trying to fully understand the math and matrix dimensionality and operations.

13   Study the class notes and watch course videos

14   I could have revised the linear algebra concepts before attending the class.