MODULE REPORT

Module	CS3244 - MACHINE LEARNING
Academic Year/Sem	2020/2021 - Sem 1
Department	COMPUTER SCIENCE
Faculty	SCHOOL OF COMPUTING

Note: Class Size = Invited; Response Size = Responded; Response Rate = Response Ratio

Raters	Student
Responded	160
Invited	270
Response Ratio	59%

1. Overall opinion of the module

Distribution of Responses

What is your overall opinion of the module?	
Very good (14)	9%
Good (58)	36%
Average (41)	26%
Poor (30)	19%
Very poor (16)	10%
[Total (159)]	

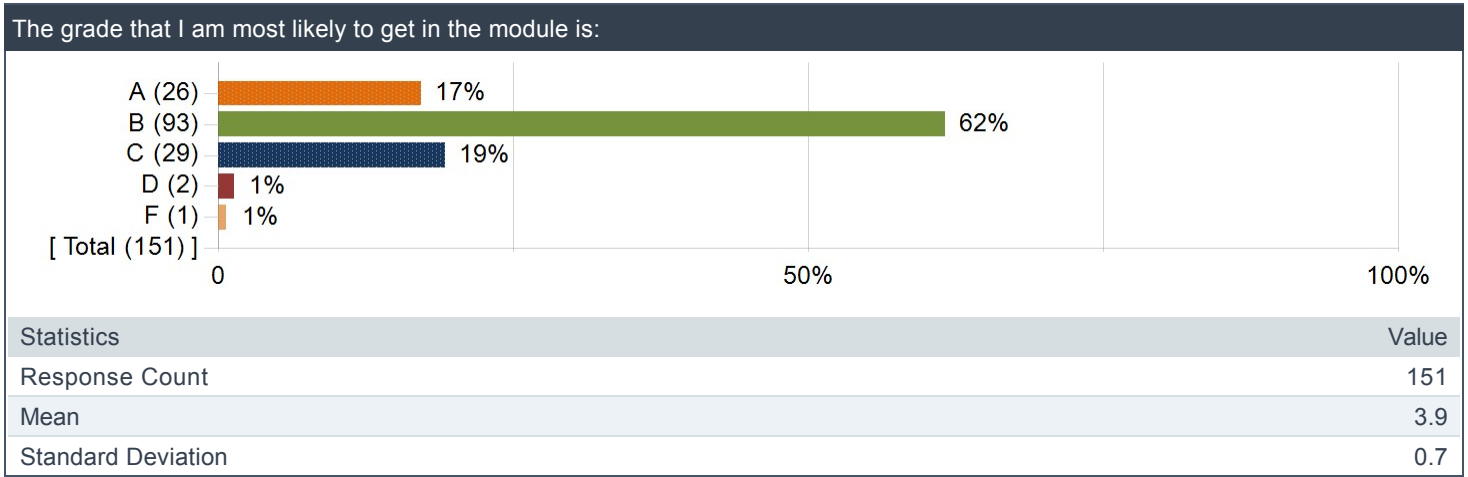| Statistics	Value
Response Count	159
Mean	3.2
Standard Deviation	1.1

Rating Scores

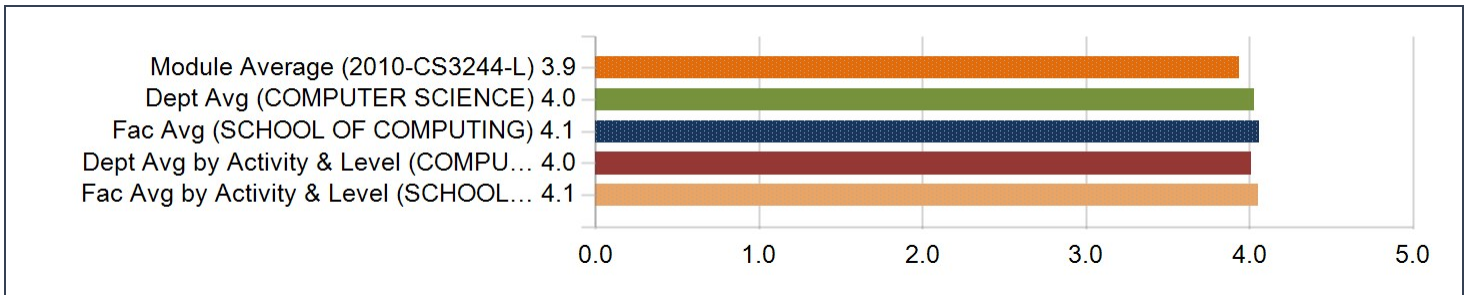| Question	Module Average (2010-CS3244-L)		Dept Avg (COMPUTER SCIENCE)		Fac Avg (SCHOOL OF COMPUTING)		Dept Avg by Activity & Level (COMPUTER SCIENCE-LECTURE (Level 3000))		Fac Avg by Activity & Level (SCHOOL OF COMPUTING-LECTURE (Level 3000))	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
What is your overall opinion of the module?	3.2	1.1	3.9	1.0	3.8	1.0	3.4	1.1	3.5	1.1
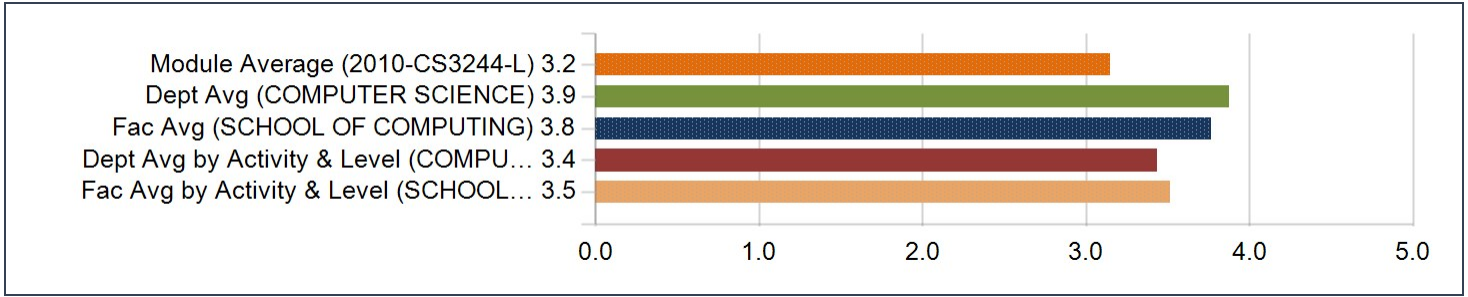
2. Expected Grade

Distribution of Responses

The grade that I am most likely to get in the module is:

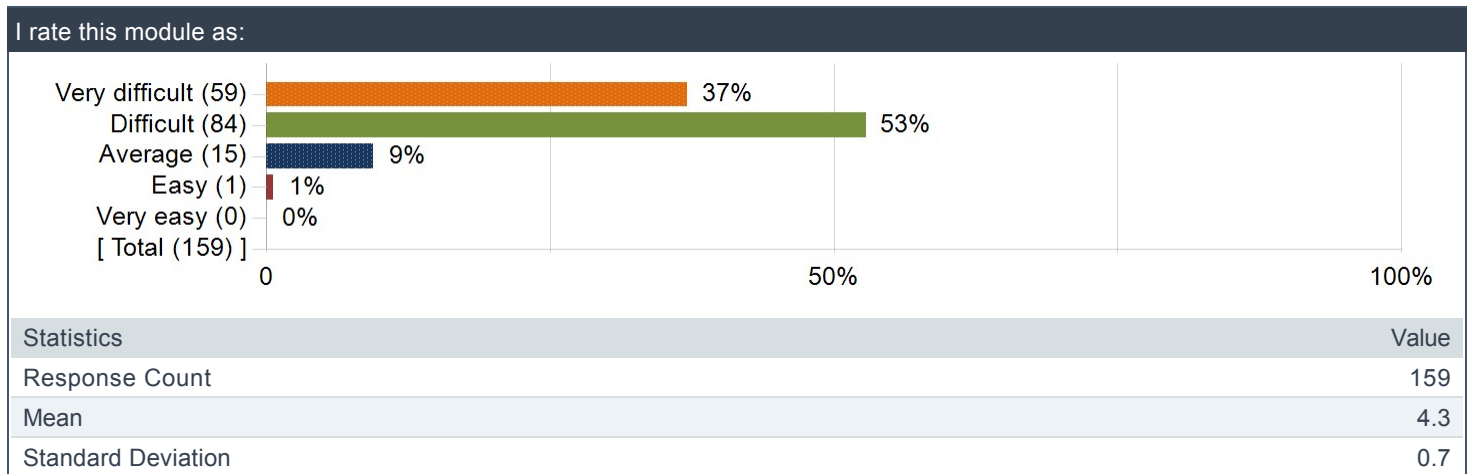| Statistics	Value
Response Count	151
Mean	3.9
Standard Deviation	0.7

Rating Scores

| Question	Module Average (2010-CS3244-L)		Dept Avg (COMPUTER SCIENCE)		Fac Avg (SCHOOL OF COMPUTING)		Dept Avg by Activity & Level (COMPUTER SCIENCE-LECTURE (Level 3000))		Fac Avg by Activity & Level (SCHOOL OF COMPUTING-LECTURE (Level 3000))	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
The grade that I am most likely to get in the module is:	3.9	0.7	4.0	0.8	4.1	0.8	4.0	0.8	4.1	0.7

3. Difficulty Level of the module

Distribution of Responses

I rate this module as:

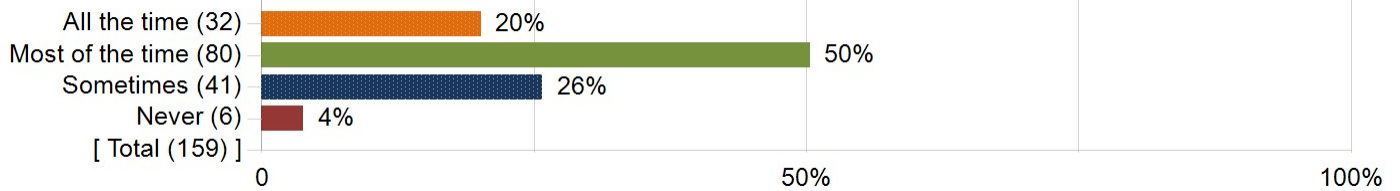| Statistics	Value
Response Count	159
Mean	4.3
Standard Deviation	0.7

Rating Scores

Question	Module Average (2010-CS3244-L)		Dept Avg (COMPUTER SCIENCE)		Fac Avg (SCHOOL OF COMPUTING)		Dept Avg by Activity & Level (COMPUTER SCIENCE-LECTURE (Level 3000))		Fac Avg by Activity & Level (SCHOOL OF COMPUTING-LECTURE (Level 3000))	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
I rate this module as:	4.3	0.7	4.0	0.8	3.9	0.8	4.0	0.8	3.9	0.8
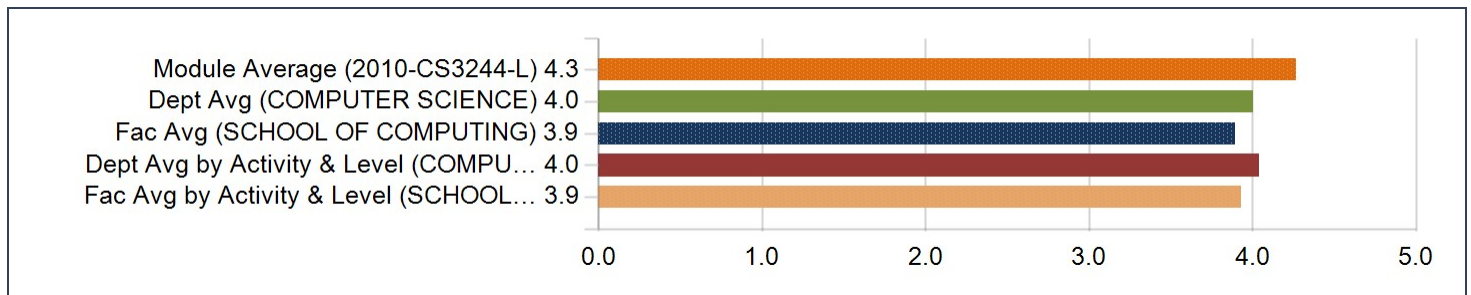
MODULE LEARNING OUTCOMES

1. Understand the basic concepts of machine learning.

Understand the basic concepts of machine learning.

All the time (32) — 20%
Most of the time (80) — 50%
Sometimes (41) — 26%
Never (6) — 4%
[Total (159)]

Statistics	Value
Response Count	159
Mean	2.9
Standard Deviation	0.8

2. Apply an appropriate machine learning algorithm for a given problem.

Apply an appropriate machine learning algorithm for a given problem.

All the time (17) — 11%
Most of the time (73) — 46%
Sometimes (63) — 40%
Never (6) — 4%
[Total (159)]
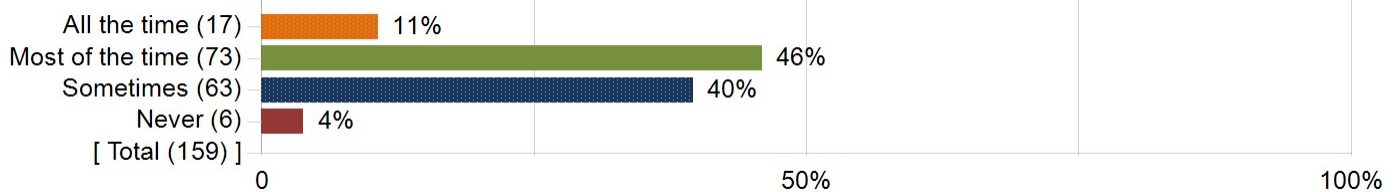
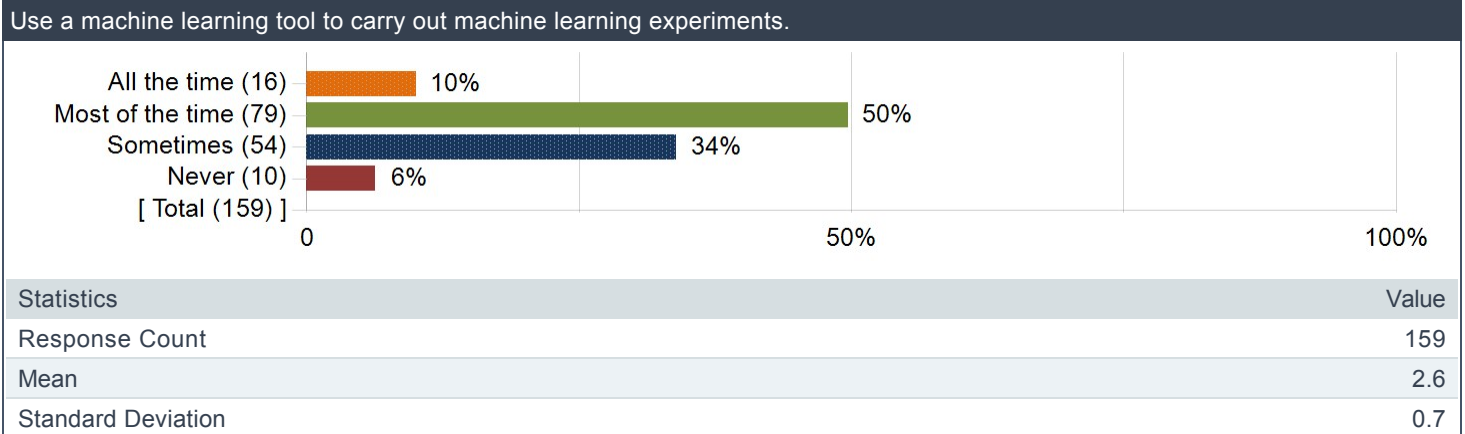| Statistics	Value
Response Count	159
Mean	2.6
Standard Deviation	0.7

3. Evaluate the performance of a machine learning solution.

Evaluate the performance of a machine learning solution.

All the time (17) — 11%
Most of the time (71) — 45%
Sometimes (65) — 41%
Never (6) — 4%
[Total (159)]
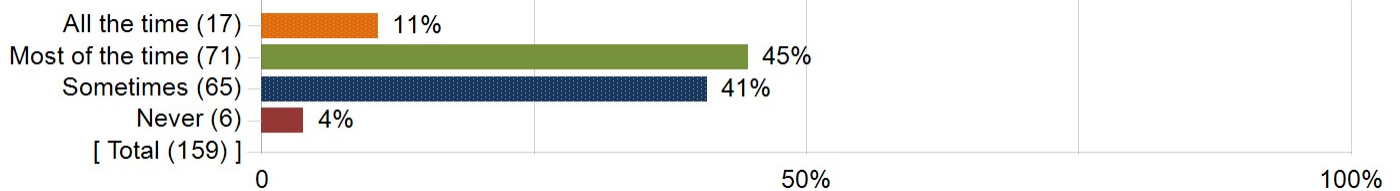
Statistics	Value
Response Count	159
Mean	2.6
Standard Deviation	0.7

4. Use a machine learning tool to carry out machine learning experiments.

Use a machine learning tool to carry out machine learning experiments.

All the time (16) — 10%
Most of the time (79) — 50%
Sometimes (54) — 34%
Never (10) — 6%
[Total (159)]

Statistics	Value
Response Count	159
Mean	2.6
Standard Deviation	0.7

WHAT I LIKE / DISLIKE ABOUT THE MODULE

What I liked about the module:

Comments
the way the videos were readily available and accessible
Introduction to machine learning, very important skill. Flipped lectures made it easy to learn at my own pace. Quizzes help to reinforce my knowledge.
Colab notebooks are a good way to understand the content and apply it.
it is an interesting module
–
Concepts are interesting; Machine Learning itself is already a very interesting area to delve into.
Colabs are a great help for the practical aspect of machine learning, and are very informative.
Interesting topic
I like these topics such as concept learning is interesting.
interesting content
Concepts were interesting and fun to learn. Giving students the opportunity to start their own project based on their own area of interest also helps a lot in learning.
Prof was very helpful and gave help sessions, which honestly helped a lot. Tutorials need to be better improve to include concept and theory questions covered in the exam. Practice for the calculation questions for markov chains, neural networks and decision trees were simply collab questions, which were very simple example. The tutorials should have questions for harder example of such questions for preparation of exam. These calculation questions were important calculations that consolidates understanding.
It covered many concepts in machine learning and gives us a lot of room to explore areas we are interested in.
Exposure to various machine learning concepts. I can now confidently discuss some of the concepts when talking to friends and professionals.
Willingness to take feedback
Covers a great deal of information about machine learning, teaches students a wide variety of materials.
The materials taught are very useful.
Content is relevant to the real world
Module was well–planned in terms of distribution of students' work load throughout the semester. Higher work load on weeks with no/less submissions and relatively lighter content covered on weeks with submissions, truly appreciated! I appreciate Prof Min's innovations, fast response, modes of learning for the students – lecture videos and help sessions which I attended. Feedback was sufficiently and quite efficiently given. Prof and TAs' effort, hard work and dedication are all very evident, which I am very thankful about. This module has definitely increased my interest in this field.

Comments
nil
A number of colab exercises provided. Exam structure and format is manageable. The option of allowing students to choose between participating in STePS or not is good for students who have different workload preferences.
The topics are interesting.
Guest lecturers, personalized feedback and updates
The content and the ability to set your own challenges in the project.
It introduces me to the hype about machine learning and the project really got me into understanding the content.
–
Taught me many things about machine learning that I did not even know were part of machine learning. Opened my mind up a lot. Was a lot wider than I expected (in a good way).
I gained good experience in machine learning as well as they key concepts
Exposure to ML and able to work on a project.
NIL
content were interesting.
Challenging
its about machine learning, a very popular field today
Machine learning is really an interesting topic
This module challenges me intellectually and gives students a good foundation to Machine Learning.
Interesting.
Contentwise, the module is great. It covers a wide range of ML concepts and it teaches a good way of applying the concept, rather than using black–box models.
The hands–on parts
Good introduction to machine learning
Gaining practical knowledge through the project and assignments
Even though the module is quite content heavy, the combination of colabmology and bite size video lecture really made absorbing them easier.
None
ML is super interesting!! I loved learning how simple math concepts I learnt since secondary school actually had such powerful uses in the world of ML. :)
very nice introduction into machine learning as it touches on a lot of important topics
nil
Fun, challenging
The notebooks provide a good hands–on experience of machine learning.
We had a very good overview of machine learning under the hood. The content is comprehensive enough to have a good grasp of ML but not too overbearing.
Machine learning concepts are really interesting and I like how the module covers quite a few aspects of it.
Colab notebooks, that's it
Absolutely nothing
The project work made the module fun and made me see the links of how i can apply it to the real world
Nothing
1. Project–based. At the end of the sem, I have a fully completed project which I can include in my resume.
2. Allow us to choose our project and mixing of other sub–teams to ensure diversity
The lectures were amazingly done! That said, there are times when the concepts were glossed over too quickly. I understand that the main objective of the course is to be an introduction to the world of machine learning, however the times when deeper concepts are glossed over still makes it disconcerting for the learners. The feeling of having a general idea in your mind but yet not understanding it completely is irksome to learners like me. This happens more and more often at the second half of the course. It is especially prominent for the eigenvector and orthonormal bases part of unsupervised learning. I had to take extra time out of studying for other modules to quell my doubts and uncertainties. Even though it is good in terms of furthering my interest in machine learning and improving my machine learning knowledge, I would still prefer if I did not have to make sacrifices from my

Comments
other modules at that hectic period in time. Otherwise, this course, CS3244 has been the defining course of this semester for me. It was really fun thanks to the TAs and the clear explanations from Prof Min made the journey a challenging but rewarding ride. Thank you to everyone involved! The colab notebooks were incredibly helpful. Getting to keep a notebook with us going forward into future projects/work so that we can reference back to what we have done is reassuring. However, the coding portions of the notebooks can take a little too long at times, especially the parts where the final result is dependent on multiple previous sections. It took me some time to identify which is the problematic section above.
I have learnt different machine learning methods which are interesting without too much of the math part.
–
interesting
Informative
The wide topics introduced in the module
The main thing I liked about the module is the open–endedness of the group project to encourage flexibility and creativity of students to pursue their interests.
clear communication
good to take to put on resume
–
interesting project was helpful in linking what i learn to future applications
It was interesting to look at different tribes of machine learning and the differences in their algorithms. This module also gave me an insight into how machine learning is used for many of the things we see today like Google Translate or even fields of computer vision.

What I did not like about the module:

Comments
Slides for video and slides for content are not the same, thus there is some confusion once in a while. Colab notebooks can be quite difficult at times, with students feeling lost. Feels like too much ML concepts squeezed into 1 semester
There are often many errors in the notes. Even though the lecturer would update the notes and upload a new one, it still hinders my study. As I would spend time think why is something written in this way only to know that the notes is annotated wrongly.
The workload is just extremely insane and I had to sacrifice keeping up with my other modules just to barely catch up with 3244 most of the time. It does not help that the content is extremely difficult as well.
the way lectures were conducted, the amount of content,
There was a lot of independent work that had to be done to understand the materials given.
I strongly dislike a few things about the module. 1. Amount of content – I understand the need for breadth in Machine Learning, but the amount of content is seriously excessive. It's difficult to study for and get a good understand of every topic, yet exams require you to have that same depth of knowledge. 2. Explanation of content is very unclear – the flipped classroom structure is very badly done. I believe that a lot of undergraduates are struggling with the concepts being taught in lecture, as the prof does not manage to convey a clear thought process and concepts across well. The slides are a huge mess and when prof tries to explain topics, a lot of the time he jumps into it without providing context or giving a general idea. The math is very overwhelming for CS students and it becomes very difficult to follow. A lot of googling has to be done after watching lectures because I completely do not understand what the prof is trying to say. 3. Tutorial questions are underwhelming – I feel like the tutorials can be generally done better. A lot of the time the questions are difficult to grasp or understand. MCQs with some structured questions in tutorials would really help in furthering understanding of topics. 4. Administration – not a big issue, but I believe coursemology is a bad platform overall. Some of my submissions did not go through properly. Overall, this module has completely negated my interest in Machine Learning as an area to pursue in the future. The module is not well taught and has left me with more questions after every lecture than better understanding. It became a chore after midterms and

Comments
the flipped classroom structure means that the workload is insane. It is not well structured as an introductory module for CS undergraduates without prior knowledge of the topics, as understanding will not come from the lectures but rather from a lot of self research and shorter YouTube videos. I would not recommend this module to students under this prof due to these reasons.
Project is too difficult with little guidance
The materials given, slides are not informative enough. terms are not defined it just looks like a lot of symbols and equations. extremely difficult to use them as reference
Too many materials and assignments to go through for a 4mc module
I think it is very difficult to ask for help in this module.
bad planning. it is not the content is changing, thats why he can't teach in detail. It's that his notes are everywhere.
Ethics of machine learning was really interesting for me and I felt like it was a pity that it wasn't introduced at the beginning of the course. It would be interesting to discuss more about it. Certain pre–recorded videos were outdated with changes in notations in the videos that make things confusing. Planning of schedule could be better since there wasn't a proper tutorial session for tutorial 10 due to the first exam.
The module was intending to teach too many stuff. There were a few parts that were important but details were left out, that made me very confused about what was taught. The module assumes some machine learning knowledge not completely none. For instance, svm was taught but not thorough. The lecture on svm may be okay if students had some mathematical knowledge but not for most students.
It assumed certain prerequisite knowledge that most students did not have (e.g. covariance matrix/eigendecomposition used in PCA)
The project is so bad. Students who have zero experience like me would just suffer a lot because the content is not even taught.
workload is too heavy!! lecture videos, 2 coursemology (pre and post) to submit each week, tutorial to prepare for and attend each week, and the Project is way too heavy (6 components + doing the ML part itself + doing peer reviews)
– The project component is very strange. Many learners are new to ML and yet asked to choose a topic as early as week 2 of the term. – The math is very poorly explained in lecture. It seems like Prof assumes knowledge that is higher than the prerequisite. For example, mentioning that we should have learned SVD in linear algebra, when MA1101R did not have it. It is in fact in a 4k MA module, MA4230 Matrix Computation. – Deadlines are everywhere and not synchronised. The lecture says certain date, and the document says certain date. I would suggest having a single source of truth, which brings me to the next point – No single source of truth of everything. Deadlines for final report are in one place, deadlines for video and miscellaneous stuff seems to be in another place. – Corrections to lecture slides are made sneakily and uploaded without announcement. Even though it is clearly stated in the materials folder, not many seem to be aware of it – Cryptic versioning. Not sure what 'v2010XXX' mean. – A lot of inconsistencies between Colab and Coursemology. Sometimes things that pass on Colab doesn't pass on Coursemology. – Poor feedback given by Coursemology. Sometimes I don't even know if the failure is due to syntax error
Workload is very heavy. The teaching is somewhat convoluted, and it takes a lot of time to understand the subject material. Course admin can also be improved e.g. exam taking platform.
TOO MUCH WORK. Seriously. 2 full exams, 2 assignments every week plus tutorial and an incredibly heavy project (report, code, poster,video, presentation, endless lecture videos????? What are you guys thinking???) I spent 70% of my time this semseter on this module.
Lecture notes did not feel consistent, and most of the post lecture notes had more advanced level implementations which could be explained better. In general, I think that the basics for each topic should be built first instead of just skimming through the basics and going in depth right away.
The lectures were not so clear in explanation for difficult topics.
Workload is quite high

Comments

Disorganised management, information about submissions are unclear.

1. Very unclear. The explanations for most of the materials are, at best, insufficient. I think the module is trying to strike a balance between the maths and the nonmaths part, but less maths part also makes the explanations more unclear, given that the foundation of them are all maths. Perhaps, the lecturers for the module can come up with a comprehensive lecture notes which includes the details, and the only lecture slides are used for teaching, so whenever students feel confused, they can always refer to the lecture notes.

* Exam format: I wonder if the teaching team has really thought well, before setting the paper. Seriously, who came up with the "ingenious" idea of a calculation question which worth 10 marks, and required us to show our working.
The problems of setting these questions are:
1. Students are human and not calculators, given that it's a 3k module, the tests should require higher–order thinking, it is not that calculation question should not appear, however, such a tedious, uninspiring question is simply unpalatable.

2. And it is much more easier to make careless mistake when doing such calculation. Yes, students should be accountable for it, but these kinds of questions, by their nature, are more prone to human errors. Simply making a small mistake, the entire question is gone. The penalty is too heavy for making even a small mistake.

3. Has the teaching team try the paper using their computer before, from head to tail? I wonder if they will still set such questions if they had tried. Looking these cramped figures at monitor for a long time is very uncomfortable to one's eyes. Especially, when it is the last section. Imagine you keep staring at your monitor for 1 hr and at last, there is this figure cramped with numbers, and one misread will cost you the entire marks.

Who thought of the questions? Seriously.

Felt very rush.

the deadlines are very bad and having finals before reading week is the worst. can be much much better planned. the planning of this module has no regard for the fact that students take 4 other modules alongside this module (they set deadlines and exam dates as if students are only taking this one module this sem)

Tedious workload with both project (with weekly updates) and lectures. Feedback for colab not timely and no solutions for previous colab notebooks provided (difficult to consolidate learning and apply concepts with gaps to subsequent concepts). Examples provided in lecture could be more simplified and more complete. Mathematical ideas for some lectures are too abstract.

The teaching style
The lecture notes are very poor. (eg. not enough egs.)
TA's also get stumbled by the tutorial topics sometimes.
Not enough questions to practice on
The timeline is too squeezed for so much content, and on top of that we have a project to deal with. And on top of that we have other module submissions to settle during the CA2 and project period.
A group size of 6 is too big for the project and needs to be smaller.
The exam format. I rather it be all mcq.

Fragmented lectures – lack of flow between content, so it's hard to get a coherent and cohesive picture of content for a particular week sometimes

see prev comments

Final exams during semester :–(

Difficult to grasp because the content is very abstract for an intro to machine learning to cover.

A lot of materials to learn and very hard.

The workload for flipped classroom is too heavy – comparable or even more lecture content, and two lengthy notebook assignments, and a 35% project makes this module quite challenging.

Too much content

References to text material not very clear, the links seemed to be in all sorts of place.

Some concepts were not taught more in depth and were just brushed over

Covered a lot of topics, but not a lot of depth. Felt a bit rushed at times to cover one topic per week.

NIL

Very high workload and very fast paced. Not enough time to grasp the context

Very high baseline workload (2 lectures, 2 coursemology assessments per week), plus 6 project deadlines.

Spending way more time than contact hours in studying the content for this module due to the lack of clarity in the lecture notes and lecture videos.

Comments
Extremely fast paced. We weren't equipped with skills we needed for the project and we almost had to learn everything on our own. A presentation + video + poster + another presentation seems really unnecessary
it rather push the student to self read and implement the model (especially deep learning) on their own instead of guiding them on a proper/ standard way to use the model just like in industry. Hence, student who supposedly picks up skills in implementing deep learning model might end up learning just theory
But it was taught in such a poor manner, one topic a week is too hasty and I did not have time to absorb the material. And why are we tested on coding in Colab Notebooks when it wasn't even taught or guided... really would appreciate more guidance. And the notations are crazy, but probably can't be helped
The pace of the module is somewhat fast for me, but it challenged my time management skills as well. On a more serious note, however, I feel that some content or foundations need to be covered in a more systematic and complete way within the lectures (rather than including random concepts in the slides), as this may impact our understanding of some concepts (I personally found that I had to google some things to fill up 'missing bits' in the slides which may impact my understanding of concepts and their application).
Too many hidden pre–req that are assumed for the student to know that are not stated.
I do not understand the point of putting the declaration as the first question for ALL three parts. Why wasn't Luminus used? Because of that pointless question, EVERY question number does not match the one on the paper, making it very very confusing when cross–checking, especially for MCQ/MRQ. It is so confusing.
Some of the mathematical concepts can be hard to mentally visualize, which is not module issue. Online semester makes coordination with project members difficult as I have not yet experienced a completely remote collaborative project before. Hard to ensure that everyone is putting in effort or on the same pages.
If you have no prior experience on ML before taking this module, the project component of it will be very demanding. Some very applicable concepts of the project are only taught in the later part of the semester, i.e. Weeks 9/10, yet project submission can be due by Week 11, leaving very little time to apply the concept to the project. Administrative issues kept cropping up as well. Clarifications on certain questions were very delayed, > 2 weeks. Lecture slides had wrong information displayed, Coursemology had some issues as well. This module have been taught multiple times already, and a lot of the course material was reused, so there shouldn't be so many issues. This is not the first time that a flipped classroom style have been used, so there were higher expectations set that the course would have been taught well.
E–learning, lack of engagement, students feel completely disengaged and it's brutal to learn alone.
Some chapters and course contents are not well designed...A bit messy in my mind.
Quite a high workload
Would have been nice if teams have a little more guidance at the start of the project from TAs so directions of exploration can be clearer.
Too much topics being covered with very little depth. Too much pre–reading is required. Teaching Team is very slow to reply or makes plenty of false promises.
Difficult and abstract content
Project was really scary :(I honestly felt like I was thrown into the ocean to swim and survive. My previous modules did not prepare for this D: Project TAs were helpful but ahhhhh the learning curve was just really steep. :,,(But I guess this is how projects in university work..? So it's my first taste I guess, I'm still getting used to the project work rigour.
time consuming
its too hard like theres too many concepts
Difficult
The second test is in week 13. I much prefer a normal final exam where I can have the reading week to revise. The recorded videos from last year and this year's slides have some inconsistencies, posing hindrance to learning. The pre– and post– lecture system adds a lot of workload. Although it was said that post–lectures are to be done post–tutorial, the tutorials involved content that is only covered in the post–lectures.
There's a lot of work to do (Watching Lectures + Lecture Quiz + Doing Tutorials + Project Work), but I'm not sure how far that can be alleviated, since it appears that the module is aiming for breadth (exposing us to all the different paradigms), and thus needs to hit everything.
Breadth of the module is too large, leaving quite little room to explore any topic in depth. Results in a shallow understanding of most topics
The workload was way too much. Having weekly collab notebook, tutorial, lectures, AND a project ontop of it, together with a week 13 quiz.

Comments

The ideas and concepts do not build up smoothly sometimes, with big gaps leaving students very lost.

Concepts were mostly taught in math language and it really was not very clear to me.

The project coinciding with finals.
Finals should be held after reading week not before as a CA given the content of the module. there's so much content that nothing tested in midterms is tested in finals.

Teaching via videos is fine, but the explanation is often poor and due to the large amount of content, often no examples are provided and it's really difficult to follow.
The examples given are only of one type, and often don't cover the different use cases.

Almost everything. Like the whole project idea is vague. Why do you want video and posters and assign such a big portion of the grade to it. Also the materials are really really disorganized. Like it makes revision so hard because I have to look at pre and post from colab and also from the lecture notes. I am so so so so so frustrated with this module and I am very sure many of my peers are as well. Maybe Min should take a look at NUS whispers and see some of the post about his teaching. Seriously bad module. One of the worst I have taken in NUS. The only reason that I am actually coping are because of Youtube videos. Very sad that a world renown university will produce a course of such standard.

the unclear scope of project, tight deadlines and late release of proposal remarks; due to increased workload from all modules arising from the e learning situation and avoidance of final exams (and hence the lack of time to revise and digest the information)

Perhaps the pre/post way of learning does not work for me. I feel all the concepts are too scattered. I'm always confused after watching the pre videos because there are too many gaps here and there. And when I start watching the post videos, I've already forgotten most of the concepts covered in the pre videos as I did not fully digest them in the first place. Initially I thought post tutorial videos are meant to be watched after tutorials but in fact, without going through all the pre and post videos it is almost impossible for me to complete the tutorials. Since both sets of videos have to be watched before tutorial, why not making them into one set of videos? So we do not need to go back to the pre videos and slides again and again while watching the post videos. Moreover, I feel Coursemology is not really a suitable platform for such flipped classroom as the functionalities are too limited. For example, since a lot of terminologies are new to me, I cannot understand some videos without looking at the subtitles, I have tried a lot of browser extensions and none of them work well for me, so I still prefer watching the videos on YouTube. Also, I think a lot of pre–work in the colab notebooks requires some understanding of post lecture content, so I really struggled with some notebooks. In general, the way of splitting the course content into pre–post tutorial creates a lot of confusion to me.

But similarly, project work was very time consuming and took alot of time away from me as 50% of my semester was spent on it and I couldn't really revise for other modules.

No guide to group project. Many of us do not know what is happening, what methods to use or even what to do. Had to rely on group mates who have experience in machine learning to explain to us and help us. Not a beginner friendly module.
Many concepts taught in lecture are not clear, had to google all of the concepts.
Tutorials do not exactly help much in exams. Some TA do not have good time management and cannot complete the tutorials. Some TA mumble as well, cannot hear anything
Exams are a mess. MCQ and open ended question. Questions are not shown on coursemology. Have to refer to PDF which is password protected. Many people have trouble typing or copying the password in and waste alot of time. There are 2 question numbers on questions due to the first one being a question number on coursemology, the second one is the question number on PDF. e.g, it is question 2 on coursemology but Q3 on PDF. Makes it very confusing when entering questions.Test on luminus would be much better.
Should be a more beginner friendly module.

1. Tight deadlines (rushing a new assignment almost every week)
2. Finals in Week 13 (lesser time to study)

The proctoring is generally quite smooth. I like how there are breaks between each section. Being able to go to the toilet every now and then is really helpful. The exam topics are mostly in line with the content taught. However, I feel there is too much of a time constraint. I was not able to put out everything I have learnt during the exam in time. If there was more time, I would definitely be able to put the answers that I am completely confident and proud of on the answer page. The fact that the exam was conducted on coursemology surveys instead of luminus quiz puzzles me as well. The coursemology survey has their own numbering beside the answer box and it really throws me off. For example, the first answer box is dedicated to getting the matric no. The first question will then be at the survey answer box 2, like: 2. Q1, then next question: 3. Q2. It takes me extra time when I am making sure that I have input my answers in the right places. Also, the pulse check every few questions during the mid–terms messes up the coursemology survey numbering even further. I can't help but feel that luminus quiz will be better as a platform for exams.

The module was poorly taught. The prof tries to cover a wide breadth of material, sacrificing the depth. Concepts in the lecture videos were often just briefly covered, and math equations were merely just stated out without explanations. Students often have to seek for other materials from other universities or through YouTube to better understand the concepts taught. The lecture slides often have errors and the recorded lecture were from past years and often do not tally with the current slides.

Administrative information was not timely provided to students. And the information provided is often confusing. For eg. stating that

Comments
the midterm was open book on the email, but stating the midterm was open internet on the forums. The TA are not responsive as well, often taking days to reply. For eg. the peer review feedback that we were supposed to complete, our group only received it just a day or two before the deadline while other groups had received at least 5 days in advance.
Teaching materials were often released late to us and we were tasked to rush through 2 weeks worth of tutorials on top of 1 topic in the last week of the module before taking the quiz. Lecture slides and videos had a lot of missing links and students have to resort to learning everything by themselves online. Moreover, there were multiple mistakes made in lecture slides that were not updated timely which greatly affected my learning progress. There were even mistakes in the teaching materials which were pointed out by students 3 days before the final quiz but these mistakes were not announced to the whole cohort and hence, those who have missed the help session would not have known about it.

Exam details and submission links for project components were released extremely late and students have to ask for them most of the time. |
| There are too many contents and learnings compressed within a module, and turns out the depth of each segment of contents were forgo. It would be better to focus on the depth instead of having learning many concepts. Apart from these intense and heavy lecture contents, we still have project segments which takes up too much of my time (70% of the time i spent studying this sem was on this module). This made me forget about the process of learning but only focus on completing the task quickly. |
| Difficult :(|
| the project seems to expect students to have prior knowledge on machine learning already but the course is literally called machine learning shouldnt they be teaching it before expecting us to produce a project on it? I think my group mainly googled how to do the project rather than applying what we learnt. |
| Very stressful |
| It really needs to decide what it wants to be. Is it an Intro to ML class? A Theory of ML class? An ML project class like in the mould of CS3216? Don't do everything at once.

My advice? Have a level 2k class called intro to ML. Model it after CS2102, where the basic terminology and structure of SQL is explained. Guide the students through the libraries without hitting them over the head with the math. Have a smaller scale project in the 2nd half. Bring in the math in a level 3k module called Theory of ML, where they can understand how the algorithms they are familiar with work. |
| Especially in the second half of the semester, notations were not clearly explained in lectures or tutorials. Questions can be rather vague at times. Concepts that may require multiple lectures in another course is only allocated a few slides here. Although the goal is to be able to generalise across the different topics, when the explanation is so brief and lacking it means almost always having to refer to external resources for most concepts. |
| The lack of clear explanation behind the maths. The lack of explanation of usage of each topic. |
| The contents are not well–explained in some topics. It seems that the pre–recorded videos are outdated and not fit to the new PPTs. |
| Due to the high availability of alternative good resources online (machine learning is highly popular), some students might feel that some concepts can be better illustrated. Nonetheless, I believe that such an approach is to develop a better mathematical foundation. |
| flipped classroom learning, peer reviews |
| too difficult for me, cannot keep up with the pace |
| the flipped classroom |
| misleading instructions and grading. the professor said on forum that coursemology XP didn't count for CA, but the CA was calculated directly based on coursemology XP. This was extremely unfair to students who were mislead |
| This module covered way too many aspects of machine learning, with the focus on breadth, it was hard to gain a deep understanding of any particular aspect. Furthermore, I do not really like how mathematical formulae and equations are often brought up in the lecture notes suddenly without being explained in detail, leaving me to have to search up more detailed explanations online. I understand that mathematical concepts are not a focus of this module but since they are useful in understanding the concept, perhaps more explanation can be given since the formulae are already provided in the lecture notes.

I also did not have a good experience for the project. As I am a complete beginner in machine learning, I felt like I had to do a lot more work and research just to deliver the same amount of work as my other teammates in the other subgroup, who are much more experienced than I am. I also feel like some of the members in the other subgroup did not really enjoy working with a less experienced member and I felt a bit pressured trying to keep up. |