TEACHER REPORT

Name of Teacher	Kan Min-Yen
Module	1710(CS3244-MACHINE LEARNING (LECTURE))
Academic Year/Sem	2017/2018 - SEM 1
Department	COMPUTER SCIENCE
Faculty	SCHOOL OF COMPUTING

Raters	Student
Responded	48
Invited	99
Response Ratio	48%

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

A. GUIDELINES FOR INTERPRETING THE REPORT

The teacher evaluation report is for developmental purposes and is meant to help identify strengths and areas for improvement. Please consider the following recommendations that will aid in interpreting the results:

1. Examine the report by taking note of patterns in order to consider how best to act on the feedback your students have taken the time to provide. Use the reflection section at the end to reflect upon how you might act on the feedback.

2. These evaluations stem from student perception and thus constitute one source of evidence among others as to the quality of your teaching. Any response to the feedback should be based on the most representative results rather than on outlying responses.

3. Upon getting a general sense as to what has gone well, and which areas may require attention and improvement, it is important to drill down to the related questions. These questions can help guide future action if feedback from students suggest areas for improvement.

4. Keep both the likert scale and written comments in mind while reading through the report. High scores (4+) suggest student consensus indicating a strength. On the other hand, low scores (2-) should be considered as an area that requires immediate developmental focus based on student feedback.

B. NOMINATION FOR TEACHING AWARDS

	Response Count
I would like to nominate Kan Min-Yen for teaching awards	5

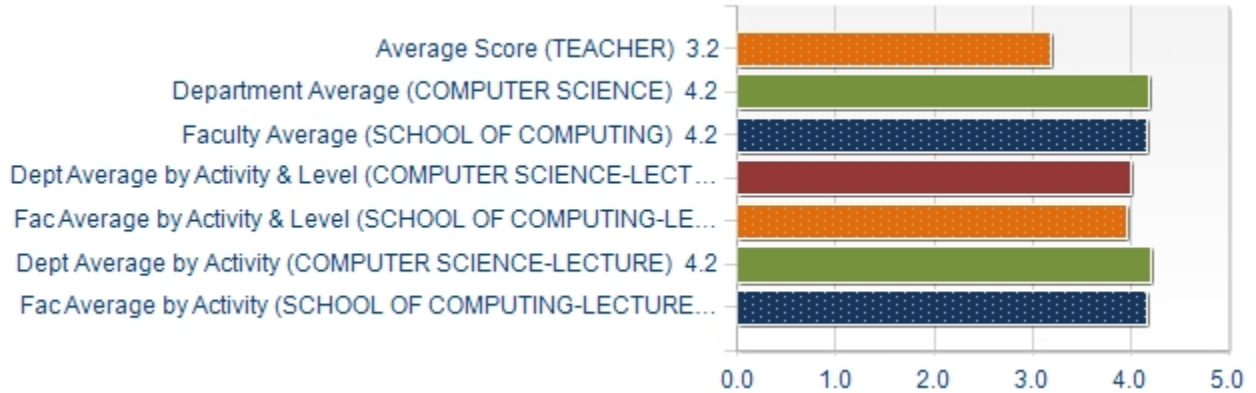| Comment |
|---|
| -He really cares for student development, and has the flexibility and consideration to make appropriate changes to meet student's needs. |
| -Very responsible(teach some tutorials by himself). Encourage students' thinking during lecture. |
| -outstanding efforts in interactive teaching methods |
| -easy to communicate |
| -he sits in every tutorial |

C. SUMMARY OF TEACHING SCORES

(i) Teaching Rating Score Analysis

Question	Average Score (TEACHER)		Department Average (COMPUTER SCIENCE)		Faculty Average (SCHOOL OF COMPUTING)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Overall, the teacher is effective.	3.2	1.4	4.2	0.8	4.2	0.8

Question	Average Score (TEACHER)	Dept Average by Activity & Level (COMPUTER SCIENCE-LECTURE (Level 3000))	Fac Average by Activity & Level (SCHOOL OF COMPUTING-LECTURE (Level 3000))	Dept Average by Activity (COMPUTER SCIENCE-LECTURE)	Fac Average by Activity (SCHOOL OF COMPUTING-LECTURE)
	Mean	Mean	Mean	Mean	Mean
Overall, the teacher is effective.	3.2	4.0	4.0	4.2	4.2

Overall, the teacher is effective

Question	Average Score (TEACHER)		Department Average (COMPUTER SCIENCE)		Faculty Average (SCHOOL OF COMPUTING)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
The teacher has enhanced my thinking ability.	3.2	1.3	4.2	0.8	4.2	0.8
The teacher provided timely and useful feedback.	3.2	1.4	4.2	0.8	4.1	0.8
The teacher has increased my interest in the subject.	3.2	1.4	4.1	0.9	4.1	0.9
Average of Q1-Q3	3.2	1.4	4.1	-	4.1	-

Question	Average Score (TEACHER)	Dept Average by Activity & Level (COMPUTER SCIENCE-LECTURE (Level 3000))	Fac Average by Activity & Level (SCHOOL OF COMPUTING-LECTURE (Level 3000))	Dept Average by Activity (COMPUTER SCIENCE-LECTURE)	Fac Average by Activity (SCHOOL OF COMPUTING-LECTURE)
	Mean	Mean	Mean	Mean	Mean
The teacher has enhanced my thinking ability.	3.2	4.0	4.0	4.2	4.2
The teacher provided timely and useful feedback.	3.2	4.0	4.0	4.1	4.1
The teacher has increased my interest in the subject.	3.2	3.9	3.9	4.1	4.1
Average of Q1-Q3	3.2	4.0	4.0	4.2	4.1

Department Specific Questions

| Question	Average Score (TEACHER)		Department Average (COMPUTER SCIENCE)	
	Mean	Standard Deviation	Mean	Standard Deviation
The teacher has enhanced my ability to communicate the subject material.	3.3	1.3	4.1	0.8

Question	Average Score (TEACHER)		Department Average (COMPUTER SCIENCE)	
	Mean	Standard Deviation	Mean	Standard Deviation
The teacher's attitude and approach encouraged me to think and work in a creative and independent way.	3.3	1.2	4.1	0.8

| Question	Average Score (TEACHER)		Department Average (COMPUTER SCIENCE)	
	Mean	Standard Deviation	Mean	Standard Deviation
The teacher cares about student development and learning.	3.8	1.2	4.2	0.8

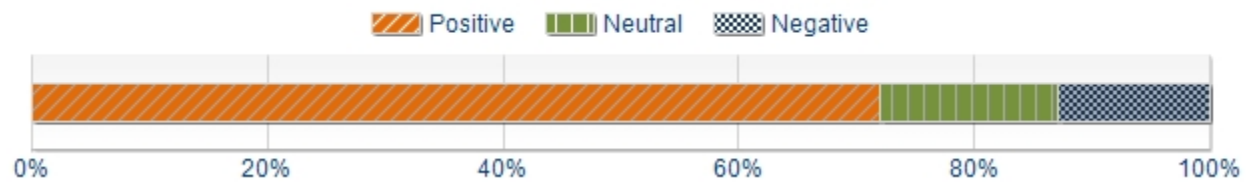## (ii) Teacher Rating Analysis Based on Scale Distribution
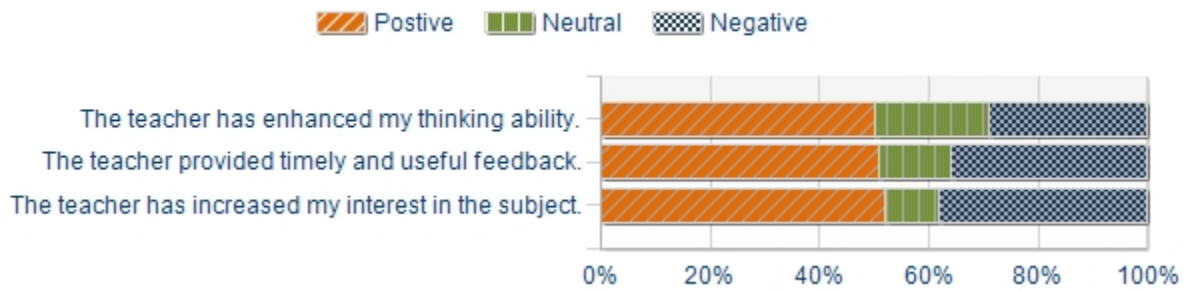
The teacher has enhanced my ability to communicate the subject material.
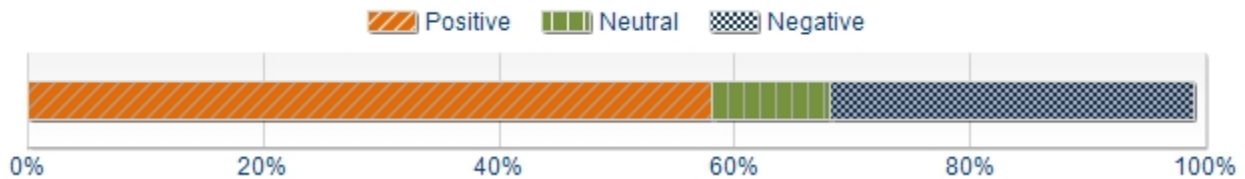
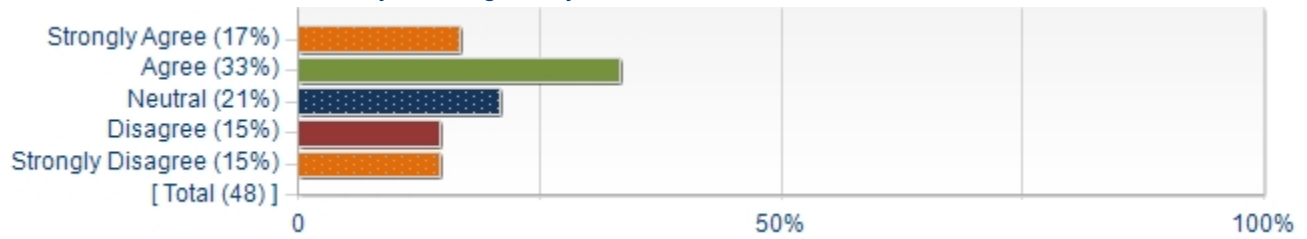**The teacher's attitude and approach encouraged me to think and work in a creative and independent way.**
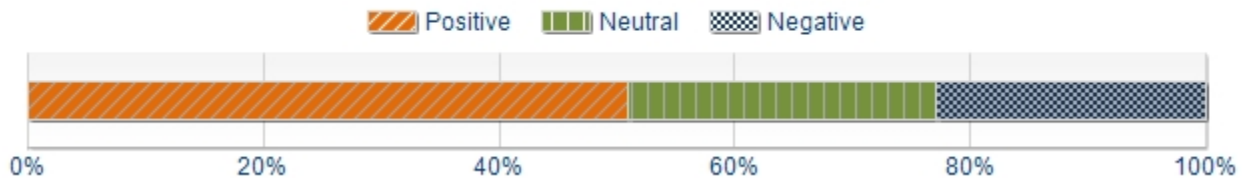
**The teacher cares about student development and learning.**

(iii) Teacher Rating Frequency Analysis

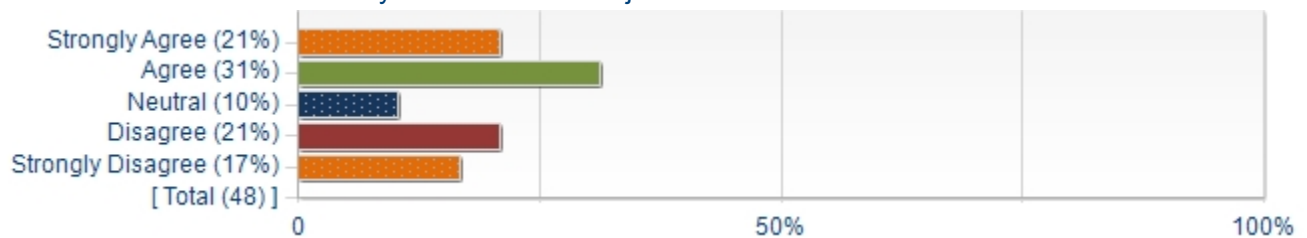### 1. The teacher has enhanced my thinking ability.

Strongly Agree (17%)
Agree (33%)
Neutral (21%)
Disagree (15%)
Strongly Disagree (15%)
[Total (48)]

Statistics	Value
Response Count	48
Mean	3.2
80th Percentile	4.0
Standard Deviation	1.3
Positive Feedback	50%

2. The teacher provided timely and useful feedback.

Strongly Agree (22%)
Agree (29%)
Neutral (13%)
Disagree (22%)
Strongly Disagree (13%)
[Total (45)]
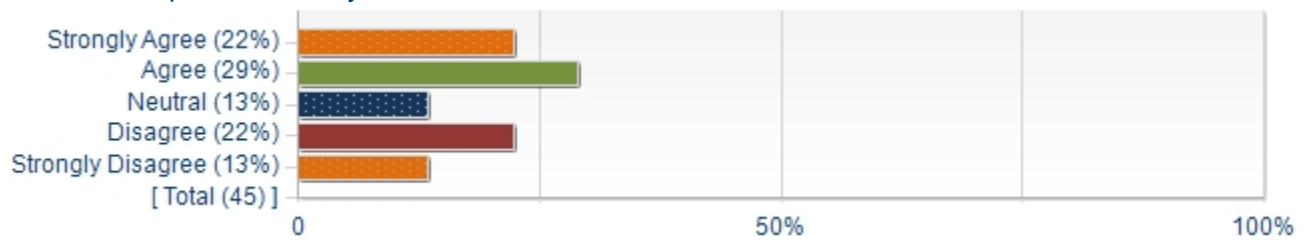
Statistics	Value
Response Count	45
Mean	3.2
80th Percentile	5.0
Standard Deviation	1.4
Positive Feedback	51%

3. The teacher has increased my interest in the subject.

Strongly Agree (21%)
Agree (31%)
Neutral (10%)
Disagree (21%)
Strongly Disagree (17%)
[Total (48)]

Statistics	Value
Response Count	48
Mean	3.2
80th Percentile	4.6
Standard Deviation	1.4
Positive Feedback	52%

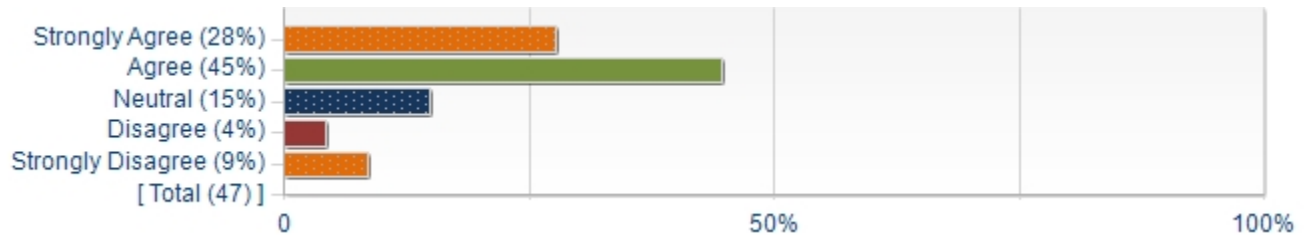**The teacher has enhanced my ability to communicate the subject material.**
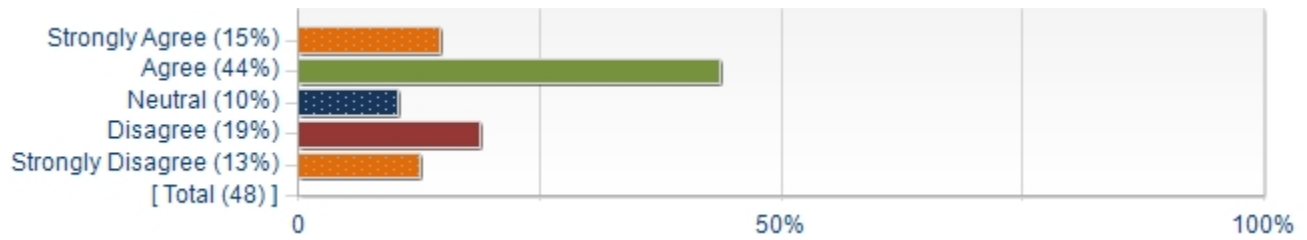
Statistics	Value
Response Count	48
Mean	3.3
80th Percentile	4.0
Standard Deviation	1.3
Positive Feedback	58%

The teacher's attitude and approach encouraged me to think and work in a creative and independent way.
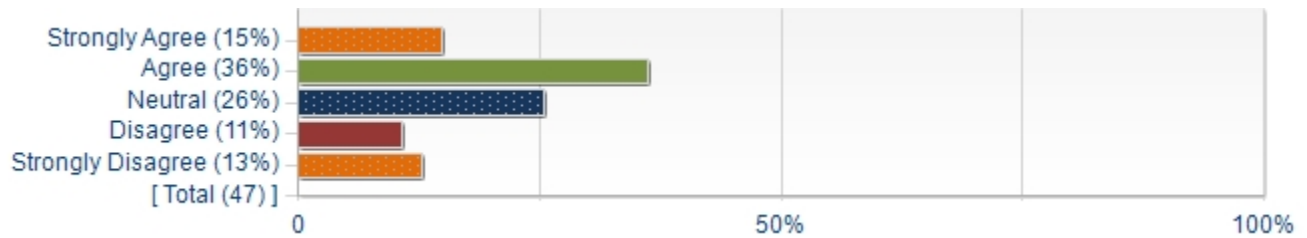
Statistics	Value
Response Count	47
Mean	3.3
80th Percentile	4.0
Standard Deviation	1.2
Positive Feedback	51%

The teacher cares about student development and learning.

Statistics	Value
Response Count	47
Mean	3.8
80th Percentile	5.0
Standard Deviation	1.2
Positive Feedback	72%

(iv) Teacher Rating Scores vs. Gender

Question	M	F	Overall
The teacher has enhanced my thinking ability.	3.4	2.8	3.2
The teacher provided timely and useful feedback.	3.5	2.7	3.2
The teacher has increased my interest in the subject.	3.5	2.4	3.2

D. STRENGTHS

What are Kan Min-Yen's strengths?

Comments
He explains certain concepts well
lecture are so bad don't even need to go^ ^ free time
English accent is very good. Humorous.
Very patient
Come to lecture on time
He really care by making the slides on his own and really able to take harsh feedbacks and managing a lot of commitments.
A strong proponent of webcasts, which really helps learning. Gives clear explanations
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he is a good teacher, able to communicate subject material in a relatively easy to understand way.
Making mistakes everywhere in the lecture notes, as well as in past year paper questions. It's hilarious how even when the tutorial solutions are copied from other reference sources, the copying is not done properly, and the copied solutions do not agree with the sources. (Tut8 Q1). Is the teaching staff even trying?
He cares about the students and is a nice professor
He is patient in explaining when you clarify content with him 1 on 1. In general, it does feel like Prof Kan hopes that the student can do well.
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Delivers lecture in a more interesting way than other professors
He really cares for student development, and almost always make immediate adjustments to lesson structure according to students' feedbacks, which is really nice. The materials were difficult to swallow at first, but the homework were especially helpful in understanding the lecture materials, as well as to gain practical confidence.
Respond fast to email
You can feel that he is eager to teach the material and tries to make complicated things as plausible as possible to the viewer.
easy to communicate
He is very approachable and helpful to students.
He puts in effort to enhance students' learning.

E. AREAS FOR IMPROVEMENT

What improvements would you suggest to Kan Min-Yen?

Comments

Comments

Maybe run through some libraries in lecture rather than giving us concepts

juz give up lectures and let students watch webcast of caltech like cs3230

I think he doesn't explain the mathematics of machine learning well.

For week 11 lecture, he could have used the example from the textbook directly. The examples from Stanford notes are sort of irrelevant and make the notes very unclear.

There are a lot of mistakes and typos in the tutorial sheets. I hope he could correct these for the next iteration. Also, for the tutorial solutions, it's better not to use italics. Instead, open a new section titled "Solution" for each of the problems.

Maybe fully flipped classroom or just physical. One week with both flip and physical classes covers too much material.

More practice instead of long lecture note and explanation

Maybe you can adopt Lee Wee Sun way (CS3230) teaching. After watching the lectures from Caltech I realized your slides omit ALOT of information assuming students have strong background in the ML technical terms. Maybe you can make it 100% flip classroom by making students watch certain caltech lectures and during lecture/recitation gives student archipelago questions to do to test their understanding. I think this would be a better choice and you can relax from keep speaking things that doesn't link as a AI fundamental module. I've taken a couple of AI modules before this including level 5ks one and honestly your lectures is like "another level". Plus most students have other modules to juggle not 100% just watching some random videos on youtube etc.

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It is nearing the end of the semester and I am still not able to pinpoint exactly what I learnt or took out of this module. This could speak to either the failure of the module or of myself, but in this case I believe it would be the former.

1. Lecturer takes on an interesting approach to math

One can either attempt to take on a rigorous stance to the mathematics behind machine learning, or focus on the intuitions without the math. The lecturer seems to not be able to decide between the two. It is not acceptable to dump mathematical monstrosities on the lecture slides with little to no explanation. It takes a while for me to even figure out the *notation*, let alone the proofs (often non-existent)!

I would like to note here that while many other lecturers do re-appropriate much of their lecture resources from elsewhere, it takes a special level of incompetency to re-appropriate an entire module from Yaser and yet still do so much drastically worse. I have taken to watching his lectures, instead of the official ones from this module.

2. Disconnect between lectures and tutorials

No one expects the lecture to spoonfeed all the answers such that the tutorials are an exercise in memory. It is good for tutorial questions to require some higher order thinking about the material covered in lecture. What is completely unacceptable is that prerequisite facts such as mathematical definitions required for solving the tutorial questions are not even provided anywhere. Going through the tutorial answers is not the time to pull prerequisite facts out of nowhere. It is due to this that many of my friends completely stopped bothering to attempt the tutorial questions after the third week, as it is an exercise in futility.

3. In fact, tutorials are a joke

A tutor can work through a question halfway and completely forget how the proof works, even after flashing the solutions on the screen. Even as a fellow undergraduate tutor myself, I cannot sympathize with this lack of preparation.

4. Course admin is a mess

I can sympathize with the tutors having 50% more students than originally planned for. I cannot sympathize with not even having the discipline to upload the tutorial pdfs with a proper naming convention -- there are like 3 different versions of the pdf uploaded with name "tutorial-9.pdf", "totorial-9.pdf" [sic], "T9.pdf", etc. (And yet our homework submissions are so heavily penalized for small things like extra nested zip structure?)

In addition, the Kaggle competition is a disaster. Any other module would have its tutors at least beta-test the platform to ensure that it *works*. Yet, there are so many errors that a very basic, 2-min check, would have surfaced -- For the first week of the competition, no one can even submit any predictions! Thereafter, the judging criteria was different from that

Comments

as specified on the homework specifications (specs says drop rows with 0 sales, judging criteria coerces them to 1). Yet, the TAs did not so much as create an announcement to highlight this, instead hiding these facts in some obscure forum post. Furthermore, team merging wasn't supported.

I find it hard to believe that the tutors being overworked with additional students can serve as an excuse for not having the time merely to copy and paste a forum post into an IVLE announcement. I would suggest that some responsibility be taken here, as opposed to blaming everything on the extra 50% student intake.

5. Those who live in glass houses shouldn't throw stones

The teaching staff penalizes entirely arbitrarily in terms of coding style. There is an inherent subjectivity in coding style, yes, but if the teaching staff is unwilling to document their coding style, then penalties in this domain should be kept to the most obvious of cases, i.e. completely unreadable code. Yet, things like missing comments for functions that are so short as to be obvious at a glance incur a penalty.

In addition, I argue that the solutions to the coding questions in tutorial, as well as the template for the homework assignments, indeed fit this bill of unreadability. PEP8 seems to have been completely thrown out of the window. There are missing spaces between operators. The naming of variables seems to be inspired by the alphabet song. In fact, visually looking at the code, I am amazed that some of the code even *works*.

To put things in perspective, missing comments for small, easy-to-understand functions are at most a small transgression (I argue that it is not a transgression at all), in light of the code monstrosities that your tutors are uploading as tutorial solutions.

6. Reusing a midterm paper from last year as re-midterm? Seriously?

The lecturer has repeatedly refused to release any midterm paper from previous semesters, citing excuses such as the curriculum being vastly different, and practicing on the previous semester's midterm not likely to be useful in preparing for the midterm. Yet, I have it on good authority that the lecturer re-purposed in full (i.e. not a single change) the previous semester's midterm as a make-up midterm paper this semester. Clearly, the lecturer himself cannot possibly believe his own excuses, if he can set last semester's midterm as a make-up midterm paper this semester.

In addition, last semester's midterm is publicly available, from the previous batch of students. Indeed, the PDF was being circulated around freely.

I note, for the record, that the top scorer for the midterm took the make-up midterm paper and got full marks for the paper. I would like to point out that if I took the make-up midterm paper (which is last semester's paper), I also would have gotten full marks, as would countless others, everyone having done it as a practice paper before.

In closing, this is possibly the worst module I have ever taken in my entire NUS life. Part of the reason for this could indeed be circumstantial (i.e. the student intake), but I would suggest that a large bit of it arises from the lack of accountability of the teaching staff.

a bit more focus on the math aspects would be great, the hardest parts of the course are the math, and it is difficult for me to understand the math sometimes.

For god's sake could you make the slides at least somewhat self contained. It is utterly impossible to gain any knowledge at all just from reading the slides, since absolutely nothing is defined properly and no real algorithms are described.

If you want to use the PhD students from your own lab as TAs, please make sure to do the proper selection, and base the selection on ability and merit instead of personal connections. I feel cheated when the TAs are getting paid (probably with a significant amount, since they keep citing how they spend a lot of hours to manage the 50% more students) when they cannot teach, and I am sure many others share the same sentiment. As a fellow tutor myself, I feel that this is the wrong way to go about teaching. If I have to be extreme, I suggest that the whole teaching staff gets banned from TA-ing any other modules until they learn how to properly manage a module.

Honestly I was quite suprised that so much of the course material was taken from the Caltech lectures. There were some new information like neural networks, but overall much was still the same. Also, for the 3rd assignment, was sorta fun but I think would be better to have it abit more structured because it was very open ended.

This course is the worst I have taken in School of Computing, and I truly care about SoC being a top class institution

and hence this review will be lengthy but sincere.

Course Curriculum and Lecture

This course is very much a combination of Stanford's CS229,CS231 and Caltech's Machine Learning course. On one hand it might be very tempting to believe that our students actually learn both in 1 module. On the other hand, it is really naive to think so. Most of our lectures are touch and go with extremely little explanation. It is like applying "wishful thinking" that our students can even have a strong mathematical underpinning on the materials. With this materials, we at best have a heuristic understanding. If we want a touch and go style lecture, we should give readings such as http://cs231n.github.io/convolutional-networks/ BEFORE the lecture and make them compulsory. We can even cut off the entire part on neural networks, CNN and deep learning and focus on the portion in front. Teaching poorly and glossing over materials is as good as not teaching, we might as well focus on the portion in front.

Tutorials

While we obtain a heuristic understanding in lectures, the tutorial questions are an absolute beast that demands immense understanding of linear algebra and probability computation. Personally, I have taken up to linear algebra II and got very good grades for all mathematics courses but find it very difficult to complete some of those questions. Take for example Tutorial 7 qn 2. And as I suggested in midterms, please split the questions into different parts and guide us along. The question is still meaningful, but it should be made more manageable.

Lecturer

The structure of the course as described previously is extremely poor, so it has limited the capacity of Prof Kan to demonstrate his teaching prowess. Nevertheless, I want to give some pointers. Please DO NOT focus too much on archipelago. Admitting and acknowledging faults/flaws preemptively does not make it right, don't do that too often, it sends the signal that you do not care about it anymore. A good dosage of acknowledging flaws tells student that you are trying to improve, but overdoing it is bad.

Don't just copy other course's slides, try to get a more consistent content. All concepts he covered he just touch-and-go, without giving the deep explanation, but yet he expected us to know everything. So now we know every superficial knowledge of everty aspect but didn't learn anything. We suggest to reduce the content, but teach deeper

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Perhaps part of the course organisation mess is due to restructuring, I suggest that the course follows other online courses more closely so that we don't have to spend double the time to learn the same thing.

Tutorials are almost a disaster, starting right from tutorial 1.
The questions are nothing similar to the materials taught in lecture. I believed the tutors prepared the tutorials, and they might be out of touch with the current syllabus, so I hope they can get up to speed with it and make tutorials a better learning experience.

I took this module as I was made to do data analytic over the course of my internship - I expected to learn something useful from this module.

1. Module is generally unorganised
I noticed that there are times when videos were uploaded to be viewed one day before the lecture. This has brought about quite an inconvenience, as then the implicit assumption was that I would have time to watch the lecture within that one day – the alternative being lost in the entire lecture, which is generally what happens. In other words, attending lecture becomes useless, as I am not able to follow the discussion in class.
Considering that most students have assignments planned and project meetings to attend, I think it is unreasonable to assume that the students would have time to drop everything at once and watch the supplementary videos or risk being lost in lecture. While such a behaviour may be excusable if it happened once or twice, unfortunately this behaviour is more frequent that I'd like it to be.

1a. Inability to communicate important announcement
This was especially prominent in the third assignment. For one, not many people were aware that assignment 3 was released on the day itself – which leads to the main point of contention. Why was IVLE not used to communicate to the students that the assignment was released? One would be hard-pressed to see the advantages of using the course website over IVLE.
I was left with the impression that the choice of communication channel was one which is convenient for the teaching

Comments

staff, rather than what is most likely to reach the most number of students.

Subsequently, there are information pertaining to the assignment that was communicated through obscure IVLE forum. To draw an example, there are complains that the Face Recognition problem had more numbers of attempt than the alternate Rossmann Sales Prediction. To resolve this perceived unfairness, the TA created a second competition where students partaking in the Rossmann Sales Prediction may upload their predictions with greater frequency. The only problem is that this was communicated through the IVLE forum, buried by the unorganised forum posts.

2. Content

I appreciate the Professor's attempt at simplifying the content, but it was surprising to see the mismatch between tutorial and lecture – as well as the midterm test. The elevator problem, for one, was not mentioned at all during lecture nor lecture notes – I had the unpleasant experience of reading about it during exam.

If one assumes that is a one-off experience, consider the fact that I had to spend a few hours searching and reading about semi-positive definite matrices because it was not covered by the lecture. While self-learning is encouraged, I can't help but fall under the impression that the lecturer is pushing his responsibility to teach and justify on the grounds of self-learning. After all, more of us are lost for the entire tutorial. Had it been one or two questions that stumped us for tutorial, then I would assume that, indeed, the motivation was to have the students do their research and learn on their own.

I recall that one of my classmates asking the professor what is the exact scope of the midterms, and I still recall the answer being one where no scope may be provided. If the scope is not defined, then are we expected to read everything we can find about the topic? Bear in mind that most students have other modules to attend to – we are unable to spend time researching and reading about topics that was not covered in class.

In fact, it is unsurprising that most skipped out on the lecture / tutorial – not because webcast are available, but simply, there was not much value that students can derive from the lecture.

I believe that a good rule of thumb would be to ask yourself – what do I expect my students to take away from this – and making sure the lecture notes reflect that, which does not appear to be the case.

3. Assuming student's ability to mindread

This is with reference to the assignments / test. Often, the question does not ask for justification. While that is fine in itself – it was surprising to note that the answer scheme will deduct marks for failing to provide an explanation. It is a fair bet to say that was a mildly upsetting experience.

Overall, this module has been less than ideal. I believe a substantial number of issues could be solved had the professor been more considerate, and thought through his actions – but it appears that the Professor could hardly be bothered about it.

Perhaps scrap the flipped classroom lectures and either cancel the lecture and prescribe online material or give a normal lecture?

Your math slides are unwieldy amalgamations of symbols dumped onto a slide. I really wish you could restructure them to make them easier to parse in lecture. The notation is also sometimes not clear; I understand that some symbols are kinda standard but there are inconsistencies in the notation sometimes (e.g. W vs w vs bolded w vs bolded W) that makes the math hard to understand.

the materials are difficult and I hope time spent in difficult content can be more

Upload lecture slides and pre-lecture preparatory materials way earlier (at least 5 days before preferably) if not students have no time to go through the materials before lecture.
Be much clearer in explanation, don't assume that everyone has background in machine learning / artificial intelligence.

Math parts of the class were a bit unclear/shaky and could do with worked examples if possible.

F. SELF-REFLECTION

1. When comparing these results to the previous year's results, what areas have shown improvement?

2. What areas remain to be improved and what are the necessary steps / actions to do so?

3. Are there colleagues who could potentially guide me?

4. Are there issues that require departmental or institutional support?