

2018 Spring Qtr. Course Evaluation Results

Course Title:	TTIC 31250 – Introduction to the Theory of Machine Learning
Course Instructor:	Avrim Blum
Responses received:	19 (out of 24 enrolled students)

Did this course have a Teaching Assistant?				
No (19)				
The course instructor communicates ideas and concepts clearly.				
Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
			6	13
The course instructor explains the material in an interesting manner.				
Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
			5	14
The course instructor is well-organized and uses class time efficiently.				
No answer	Disagree	Somewhat agree	Agree	Strongly agree
1			3	15
The course instructor is accessible outside of class.				
In my experience, yes. (13) / Very limited availability (1) / I do not know. (5)				
How was the pace of the course?				
About right (14) / Too fast (2) / Too slow (3)				
Outside of lectures, how much time (on average) each week did you spend working on coursework for this course?				
2 to 4 hours (3) / 4 to 6 hours (5) / 6 to 8 hours (4) / More than 8 hours (5) / No answer (1)				
The grading in the course was thorough and fair.				
Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
	1		5	13
Did the course meet your expectations?				

Yes				
Yes it did				
Yes				
Almost Yes				
Yes, I learned interesting algorithms and proofs.				
Yes.				
Mostly, yes - the content lives up to the course description.				
Kind of. I was expecting more rigorous course, covering more variety of topics.				
Yes, it was an amazing course and covered fundamentals of many topics (Online/PAC learning, Bandits, RL, Diff Privacy).				
I really didn't know what the subject was about ahead of time, so no comment.				
Yes				
Yes, it exceeded my expectation.				
Yes I have a better understanding of machine learning.				
Yes, I thought the material was extremely interesting.				
Yes				
I would recommend this course to other students.				
Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
			3	16
What did you like about this course?				
Good pace. Structured to make it easy to take				
Avrim is the best. clear lecturing. fun/playful lecturing. avrim makes computer science seem like a beautiful game just waiting for us to play and explore.				
Prof. Blum is a very clear lecturer. He does a good job of finding the right pace, recognizes which pieces are going to be difficult, and involving the class in the lecture. He is very organized in both his lecture style and in the logistics of the class. He is approachable.				
I typically prefer classes taught with a board rather than with slides, and while Prof. Blum mostly used slides, he used them well and I found I did not usually mind. Three things in particular made them work well: He didn't flip too quickly through material on the slide, and was careful of giving people enough time to read and take notes when he got to the end of a slide before moving to the next one. When doing long proofs, he would often only erase half a slide at the time; when he got to the end of a slide, he would erase just the top half, leaving the bottom half there until that space was needed, similar to what one would do when lecturing at the board. Finally, he picked a font (Comic Sans) that is easy to read on slides. Its handwriting-like letters made it easy to distinguish each letter from the next, so that one can focus on the content instead of having to spend more energy parsing the words.				
The subject matter is really interesting. I was unaware of how much work there was in learning theory, and it was exciting to be introduced to so much of it.				
Although I am not in the computer science major, (actually I am really bad student without any knowledge in computer science) after I talked with the professor, I can get help to understand course material. Finally, I can still get a sense of machine learning technology which I thought some magic before I took the class.				
I liked that this course provided me the opportunity to exercise many different skills in thinking about machine learning theory - analysis, linear algebra, algorithm design, and probability/statistics in particular. There is a lot of breadth in the concepts presented, and I never felt like this course was beating a dead horse – each day there was a new aspect of learning theory to explore, albeit with just enough continuity that it wasn't overwhelming. Some highlights in my personal opinion were the mistake-bound model, boosting, game theory, and finite-state environments. While the final project was a bit open-ended, I enjoyed the opportunity to try carefully analyzing a paper in learning theory, in order to present it intuitively.				
The instructor's insight were very helpful. He knew why things work, and why things are the way they are; and was able to convey it.				

The project was a very nice idea, and I learnt a lot of new things from it.
The homeworks were extremely helpful and relevant, and Prof. Blum gave an amazing introduction to many topics in learning theory. I also learned a lot by doing the course project.
I enjoyed the light-heartedness of Professor Blum, and the survey nature of the material.
All of the examples in class were very simple, clear, and concrete, which greatly improved my understanding of the concepts
A great survey of many interesting concepts and ideas in the field of machine learning. The concrete examples are minimal and to the point. Prof. Blum did a great job captivating my attention and interest in the subject. I left every class feeling excited about learning theory! I only wish I have taken this class sooner in my career: the algorithmic emphasis is different from the statistical perspective presented in most introductory classes to ML and it is very useful.
The explanations are intuitive and what could have otherwise been dry is made easier to digest.
I thought Professor Blum did a wonderful job teaching this course. He presented the material in a way that balanced rigor with intuitiveness well. He also gave great answers to all of the questions the class asked him (even when he didn't have time for thorough answers, he always pointed people in the right direction for further inquiry) and obviously knows the material inside and out. Also, he's just a really sweet person!
Provided a different perspective on certain things I used to think about...

What did you dislike about this course? What should be changed?

I think there should be less powerpoint. when avrim played around on the whiteboard I found the lecturing easier to understand/learn. A ta could also be helpful to work through some formal proofs in detail. BIGGEST COMPLAINT: It would be nice if there were office hours not after class. the current office hours are immediately after class. after class I am tired and just want to go home. If there were some office hours at like 9000-1000 am on a tuesday I think several people would go chat about learning theory and that would be fun.
While I'm grateful for the challenge of the interesting problem sets overall, the difficulty seemed unbalanced – in particular, homeworks 1 and 4 were twice as difficult as the others for me at least. This might just be a natural consequence of different backgrounds/strengths of students, but I'd recommend perhaps deferring one of the problems from each of those homeworks to the others so that the workload is spread out a bit more. I'd also recommend adding some more brief asides showing how the concepts in learning theory are applied in modern ML algorithms.
Course should have a full time TA. I don't think student graders have enough knowledge/patience to correctly grade answers. I found many instances, where a knowledgeable TA would have found bugs in the proof, but student graders did not.
I would have preferred longer, but fewer homeworks. They were relatively easy as well. Harder homeworks (with seperately posted hints) could be more useful.
While the final was doable in a few hours, the 24h time restriction was very stressful to me since I didn't have more than 3 free hours in any day of the finals' week (had quite a few deadlines!). I would prefer to have a longer/harder final but with more than 24hrs to do it, or possibly be able to hand it in after finals' week.
Though it seems contradictory to above, often I wished we went a little more slowly and delved into more specifics. Sometimes I felt I floundered a little bit when it came time to apply lecture to homework, and would have to do a lot of reading on my own to feel comfortable. I think the class might benefit from a problem session like Algorithms.
n/a
Some of the wording on some homework are unclear and leads to confusion and mistakes. Understanding that ML is a multidisciplinary subject, I still hope that its connections to other branches of mathematics (combinatorics, linear algebra, etc) and their usage could be more explicitly discussed in a *systematic* manner. That said, Prof. Blum did a good job pointing out *specific* tricks/mathematical facts used so I don't feel inadequate in understanding the material (given my background). Lastly, I think the course will benefit from a session that summarizes the many topics surveyed in the short ten weeks and points out the high-level relationships between different topics and possible research directions.
nothing really. I hope I would not forget these concepts. Some of the proofs are too smart. They are understandable, but to think that one could come up with such things left me awed and wondering.
I felt like the homework questions didn't always cover all of the material we learned in class. Assigning more questions and making each question slightly easier in order to get more breadth of coverage without overworking the class might be a good idea.

The homework assigned was appropriate and helpful?				
Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
			6	13
Was The TA available?				
This course did not have a TA				
Was the TA knowledgeable on the course matter and helpful?				
Not applicable				
Additional comments about the TA:				
A TA would probably help somewhat.				
How difficult was this course?				
Very easy	Easy	Average difficulty	Difficult	Very difficult
		6	9	4
Overall, how would you rate this course? <i>(Rate 1 to 5: 1 = poor quality course; 5 = high quality course)</i>				
Average Rating:			4.74	