



**Graduate Course Evaluation for Pengtao Xie
Department of Electrical and Computer Engineering**

ECE 285 - Spec Topic/Signal&Imag/Robotic
Section ID 149451
Section Number B00
Spring 2023

**Number of Evaluations Submitted: 100
Number of Students Enrolled: 107**

1. What is your reason for taking this class?

7 (7.1%): Core Course Requirement
32 (32.3%): Subject Area Requirement
31 (31.3%): Elective
29 (29.3%): Interest
1: [No Response]

2. The Instructor was clear about course expectations.

50 (50.5%): Strongly Agree
35 (35.4%): Agree
10 (10.1%): Neither Agree Nor Disagree
3 (3.0%): Disagree
1 (1.0%): Strongly Disagree
1: [No Response]

3. The Instructor was well-prepared for class.

51 (52.6%): Strongly Agree
36 (37.1%): Agree
9 (9.3%): Neither Agree Nor Disagree
1 (1.0%): Disagree
0 (0.0%): Strongly Disagree
3: [No Response]

4. The Instructor organized class activities in a way that promoted learning.

47 (48.0%): Strongly Agree
26 (26.5%): Agree
16 (16.3%): Neither Agree Nor Disagree
8 (8.2%): Disagree
1 (1.0%): Strongly Disagree
2: [No Response]

5. The Instructor promoted and encouraged questions and discussion.

54 (55.1%): Strongly Agree
32 (32.7%): Agree
11 (11.2%): Neither Agree Nor Disagree
0 (0.0%): Disagree
1 (1.0%): Strongly Disagree
2: [No Response]

6. The Instructor provided feedback (written/oral) in a way that promoted learning.

43 (44.8%): Strongly Agree
29 (30.2%): Agree
19 (19.8%): Neither Agree Nor Disagree
3 (3.1%): Disagree
2 (2.1%): Strongly Disagree
4: [No Response]

7. The Instructor was accessible to students outside of class (office hours, e-mail, etc.).

56 (58.3%): Strongly Agree
31 (32.3%): Agree
6 (6.3%): Neither Agree Nor Disagree
2 (2.1%): Disagree
1 (1.0%): Strongly Disagree
4: [No Response]

8. I would recommend this instructor overall.

51 (51.0%): Strongly Agree
33 (33.0%): Agree
11 (11.0%): Neither Agree Nor Disagree
4 (4.0%): Disagree
1 (1.0%): Strongly Disagree

9. What is your overall rating of the Instructor?

51 (51.0%):	Excellent
30 (30.0%):	Above Average
14 (14.0%):	Average
4 (4.0%):	Below Average
1 (1.0%):	Poor

10. General comments about the Instructor's performance

Please keep your comments constructive and professional, abiding by the Principles of Community

- - Slides were copy pasted from a different university. Slides quality need to improve. We literally learned nothing from slides
- Latex: while slides and homeworks were themselves not written in latex, we were expected to do complex calculations in latex. Much easier if some of the questions requiring complex and lengthy calculation were allowed to be done on pen and paper
- HWs did not cover recent topics. Rather than keeping HW and projects as open-ended, it would be great if the milestones are included in the projects so that we could learn from them.
- Lectures were pretty boring.

The course could have been much better. Would not recommend for learning.

- Amazing professor. Explains concepts very well.
- Classes are less interactive and sometimes lacks intuition and motivation when introducing a new topic.
- Clear about course logistics, but the lectures are not very well delivered.
- good
- Great
- He is super nice trying to help us understand as much as possible, he also cares about our grades
- i really liked that the professor seems to care
- knows alot, not the best at teaching or conveying the knowledge
- Need less content and more focus topic with more connected.

Assignments need to be simpler and not vague.

- Overall good coverage of latest techniques, but a bit more depth in each topic would be beneficial
- Pretty good
- pretty thorough in explaining concepts
- Prof Xie is very easy-going and listens to students' need for the course. Things could be even better if he could have all his lectures recorded.

- Prof. Pengtao gave great explanations to understand the intuition behind the various models without getting too lost in the nitty-gritty of the details. He was very open to questions and discussions during the class, that helped my understanding! Would suggest the Professor to ask a few questions to students in the class to get them to think/ assess the level of understanding.
- The instructor explains complex concepts in an easy to understand way.
- The instructor was very structured with his approach and delivered the content effectively.
- The professor is passionate and the curriculum is excellent. I learnt a lot from this course.
- The professor was fantastic, he is very knowledgable
- Very kind professor, easy to talk to! I believe that the course should be structured in a bit more of a hierarchical manner, maybe where we are introduced to some fundamentals of different topics, and then shown how those fundamentals map to different state-of-the-art applications. That way it feels a bit less of a course based around trend-chasing.

11. I would recommend this course overall.

49 (49.0%):	Strongly Agree
37 (37.0%):	Agree
11 (11.0%):	Neither Agree Nor Disagree
2 (2.0%):	Disagree
1 (1.0%):	Strongly Disagree

12. What is your overall rating of this course?

48 (48.0%):	Excellent
34 (34.0%):	Above Average
14 (14.0%):	Average
3 (3.0%):	Below Average
1 (1.0%):	Poor

13. What were the particular strengths of this course?

- Application based projects with focus on getting things running/ promoting understanding.
- Covers a lot of interesting topics around generative models and the topics are explained from basic theories.
- Covers SOTA topics in Deep Generative learning
- Depth
- DGMs are pretty popular right now though I feel we could have done more deep learning
- diverse concepts
- Effective introduction into the domain of generative models and different examples of them
- Getting hands-on experience by implementing models like VAE and GANs from scratch.

- good exposure to multiple techniques being used nowadays in ML
- Had to write reports for HWs summarising the approach. Felt it was good. But if had been longer, with milestones, much better. Project can be removed and instead have each HW as project with milestones. For example, do the same problem with GANs, diffusion models etc.
- Has a nice survey of a variety of state-of-the art concepts
- HW 3&4 were good. Like the project based format
- I liked the application that we did at the end of the quarter. We were allowed to implement any VAE or GAN and this helped kind of just do our model anyway we wanted.
- I liked the more open-ended assignments, though I wish some were a bit less computation heavy, had to use a lot of my late days due to waiting on models to train, maybe a bit more guidance in this area would be nice.
- i think the concepts are really cool and the programming assignments were really good
- Interesting topics
- It covers very niche ideas
- it teaches alot about generative models
- Learn generative models
- Practical application and projects. There was a really good mix of theory and applications.
- Since it is a special topics course, I think it could be better if we skip the very basics and cover the topics in a more detailed way.
- The breadth of the course is really great.
- The breadth of topics covered in this course can expose students to the very exciting field of Deep Generative Models. I also enjoyed the research project where we explored various Text to Speech models using generative AI. While we may be facing a lot of challenges in the code implementation, the process of reading extensive literature on this topic was very rewarding, and I have certainly developed a keen interest to work in this field in some capacity, in the future.
- The course provided with interesting assignments which enhanced the learning of the course.
- The topics introduced were all very relevant and interesting.
- Trending topic
- Very interesting material.
- which is a new tech are useful for job

14. What suggestions do you have for making this course more effective?

- - Slides were copy pasted from a different university. Slides quality need to improve. We literally learned nothing from slides
- Latex: while slides and homeworks were themselves not written in latex, we were expected to do complex calculations in latex. Much easier if some of the questions requiring complex and

lengthy calculation were allowed to be done on pen and paper

- HWs did not cover recent topics. Rather than keeping HW and projects as open-ended, it would be great if the milestones are included in the projects so that we could learn from them.
- Lectures were pretty boring.

The course could have been much better. Would not recommend for learning.

Include milestones in the HWs. Longer HWs with milestones.

- Assign a podcast-ready lecture hall for the course
- Could provide more materials about code tutorial
- GPU should be available for Datahub
- homework required python libraries should be either added to a customized datahub package for students to access, or how-to provided in how to get requisite packages on UCSD's resources. In this case, python-ignite for FID, IS-scores, and associated libraries for use in probabilistic applications.
- I felt like my team just got full points on the proposal and updates without any feedback. Would be nice to get some notes on the project regardless of whether or not we received full points.
- I hope the course can explain the contents in a way that is more friendly to students not familiar with the topics.
- i think some in class displays of practical deployments of generative AI would be nice
- I think the homeworks were alright but I'd like to suggest he like in this link:
<https://colab.research.google.com/github/mit-han-lab/6s965-fall2022/blob/main/labs/mit-6s965-lab4-tinyml.ipynb#scrollTo=C2IfVwSosNpo> . its for a completely different course area but the course is about hardware for deep learning and the learning outcomes are very guided which I liked. Maybe you feel its a lil too hand holding but I felt like i learnt a lot after doing such homework
- in depth explain
- Instructor tried to cover a lot of topics, but it was hard understanding them if there isn't any background knowledge in these topics. I would recommend to cover less topics but in depth. The first two assignments were laborious and didnt get to learn much from them, but last two assignments were really good.
- It will be very appreciated if the instructor can explain the concepts with more mathematics and intuition behind them.
- Less topics, and more in depth to each topic
- maybe narrow down the scope of the topics so that we can understand one concept better. For example, split half the quarter understanding GANs and half the quarter understanding diffusion models
- More code instruction
- More programming assignments could be added to cover other generative models like diffusion models. Perhaps, providing boiler plate code for assignments can also be considered, so that students can focus on the details of the model itself.
- Provide an optional reading set/papers that have in-depth explanations that students could refer

to for depth of understanding. Indicate sections or pages relevant to each lecture, so student knows exactly what to read.

- The course can have kaggle competitions.
- The course could focus a little more on the intuitions behind the algorithms
- The course has a lot of interesting topics, but there is one problem, it is not humanely possible for anybody to teach all these state-of-the-art topics in 10 weeks. So, the course feels a little rushed. By the time we understand one lecture and digest it, we have 2 more lectures pending. So, the course seems to have more breadth. I am not sure if that is the intention.
- the course heavily depends on prior knowledge and learning information from outside the class like from the internet
- The first two homeworks did not seem too relevant and would've been better if they were like the last two.
- The instructor could provide the motivation when introducing a topic and instead of just reading math through slides, could sometimes solve on the board.
- The slides could be organised better, the flow isn't maintained during switch

15. What one concept did you take from this class that will shape your future?

- Deep generative model knowledge
- Deep generative models are important
- diffusion model
- diffusion models and their main concepts
- Diffusion models which I had to learn for the project.
- Every generative model that was taught was really intriguing and would definitely help me in my career.
- GAN training
- Generative models are going to be big for a little while at least so i think deep learning generative models
- How generative models are designed
- I got a deep understanding of GANs and Large Language Models from the course.
- I have a stronger foundation in Generative Models.
- I learned the core idea about generative models that I could use to understand higher level models in future.
- I learnt GANs, AutoEncoders etc.
- I wanted to get some awareness about the exciting field of deep generative models. I gained many useful insights about various models like VAEs, GANs, Diffusion models, Normalizing flows, Transformer based LLMs and their applications. I am a Computer Engineering graduate

student and my primary interest is in building efficient hardware architectures for these models. With respect to that goal, I think I have learned a lot about how these models work.

- Multi-modal AI
- Proper understanding of important architectures, and first-hand experience of the challenges faced while training generative models.
- The first part of this course on graphical models is very widely used besides the generative model, which I found useful for my research as well.
- Thinking in terms of probability distributions, and how to apply it to real data.
- VAE and GAN
- VAEs, Diffusion Models, and hints at GPT-structure that are simpler than they are lead on.

16. Do you have any other comments to add to your evaluation?

Please keep your comments constructive and professional, abiding by the Principles of Community

- A lot needs to be improved for the course.
- Assignments require so much compute to do. People who have compute can do better.
- I enjoyed doing the project
- I think the materials of this course are too abstract to me. It introduced many aspects of deep generative models, but it's hard to understand how these models specifically work and how I can implement them. In other courses' programming homeworks, there are always detailed guides and code templates. However, in this course's programming homework, there is nothing. I have to implement some ML model from zero, which is too difficult for me.
- I wish we had more theoretical homework so that we can reinforce our understanding of the course concepts.
- I would like to thank the Professor and the TA for their time and efforts in creating this exciting course.
- Nothing
- Very interesting course and would highly recommend

Please note that any responses or comments submitted by evaluators do not necessarily reflect the opinions of instructors, Electrical and Computer Engineering, Academic Affairs, or UC San Diego. Responses and comments are made available without auditing or editing, and they may not be modified or deleted, to ensure that each evaluator has an opportunity to express his or her opinion.