Topic 4: Deep Learning (Groups 3, 5 and 8)	
Positive Feedback:	**Room for Improvement:**
Group 3: For the summary, the group uses many graphs to help understanding the definition of deep learning. For the group video, the group shows every step clearly and all the code is well organized. Group 5: For the summary, the group introduces many concepts and definitions and describe it clearly, we can learn many contents of the deep learning from the summary. For the group video, the group member speaks clearly and slow. Group 8: For the summary, the group uses many formulas and graphs to show how much calculations need to be done without convolutional neural network. This can highlight the importance of convolutional neural network. For the group video, the group describes many codes. The group also put many definitions with the code to better describe the code which is very helpful.	Group 3: For the summary, the description of the definition is too short, the definition of weights, Key Non linearity and Key operation is hard to understand for its description is too short. if it can be described in more details, it would be better. For the video, many codes do not have descriptions of what it means, if the group can add more descriptions and notes for the code, it can be easier to read and understand. Group 5: For the summary, some definition such as Deep learning network and Convolutional Neural Network is difficult to understand with only some words, if the group can combine the descriptions with graphs and equations, it would be easier to understand. For the video, the group can give more examples to better show their ideas. Group 8: For the summary, the group did not describe some definitions clearly. Back propagation algorithm and how deep learning network work are not well described and difficult to understand. The group should put more details in describing those definitions clearly. For the video, the code is simple. If the group can show some more complex examples, it would be better for us to knowing more.
Group 3: Code and algorithm are easier to implement, and the writing method is clearer Group 5: The video and code explain the process of deep learning very clearly, and introduced the difference between several different algorithms Group 8: Their code is very logical, and it is progressive, easy to understand, introduces a variety of commonly used algorithms, very practical	Group 3: I think their code is just same as the code in GitHub, hope they can do it by theirselves. The video is not about the algorithms, I think it will be better if they try to give more information about the algorithms. Group5: The example in their code is a little simple. Group8: Love their code and video! The only drawback is that they didn't end up combining the two stages (edge detect and deep neural network) to make it a complete program(For the picture example).

Group3 From them summary, they show the definition of deep learning. Meanwhile, they list the key algorithm, key nonlinearity, key operation and key rules, which helps me have overall understand of deep learning. This group also show the process of one of the important algorithm---CNN. Their video shows the complete process. Group5 This groupâ€™s summary focus on showing readers the basic nouns about deep learning, including the different model of deep leaning (Deep Neural Networks(DNN) and CNN(Convolutional Neural Network)), optimization algorithm(Adam, SGD(Stochastic Gradient Descent)) and Blackpropagation Algorithm. Their video clearly shows the complete process. Group8 In this group, they use a simple process of dell neural networks, which makes reader have better understanding of the deep learningâ€™s process. They not only show the process, but also have explain of each special noun, make me easier to understand the process. They also have conclusion about their process and the problem and solution when meeting more layers or neural. Their video clearly shows the complete process.	Group3 A little suggestion is that if they show the reader more than one algorithmâ€™s name, it will be better. Group5 A little suggestion of about their summary is if they have more structured structure to show the relationship about those technical term, readers will have better understanding about deep learning. Group8 A little suggestion about their summary is maybe they can highlight the most important feature of deep learning, which is â€˜multiple layersâ€™. (Please correct me if Iâ€™m wrong.)
G3: There are good visualization to explain what is Convolutional Neural Nets and Deep learning model in summary. G5: There are all basic knowledge about deep learning from LALFD which is helpful to make the reader understand the basic information about deep learning. There are good coding style and notes in video. That makes their explanation more clearly. G8: This summary clearly explains the Backpropagation. Compared with the other two groups, I think their jupyter notebook is the best.	G3: This summary is targeted on people who have known the basic knowledge about Deep Learning instead of beginner. Some content may make the reader be confused. For example, there is an introduction about the purpose of SGD, however there is no introduction about what is SGD. There are no formula and text to explain the code in video. That is hard to understand the code and content. G5: There are no graphs to assist the reader to understand these knowledges in summary. G8: This summary is targeted on people who have known the basic knowledge about Deep Learning instead of beginner. Some content may make the reader be confused. For example, there is no introduction about SGD.

Group 3: They gave a detailed explanation of constructing the neural network via â€˜Kerasâ€™ in Julia and how they tune the parameters to fit the model. Also, they evaluated the model and justified the feasibility of the model for prediction. The visualisation of the architecture of neural network is very intuitive in the summary paper. Also, they broke down the topic into key algorithm/ nonlinearity/ operation/ rule in the summary paper, it is easier for the readers to catch the main points of this topic. Group 5: The explanation of the code in the video presentation is in detail and they adjusted the parameters (e.g. the threshold of error for stopping the iteration in ADAM) to explain how they affect the performance of the algorithms. The summary paper covers all the subtopics and compares the SGD and ADAM. As they mentioned in the summary paper, â€˜we find that Adam is more flexibleâ€¦â€™ is consistent of their implementation in the video presentation. Group 8: The video presentation is complete, and the students gave the insights of how the algorithms cooperate with each other by specific examples. For the CNN, they used the MNIST dataset, which is a good example to explain how each layer extract features from the image. Thus, the video presentation contains a brief but complete explanation of each subtopic, and a detailed demonstration of the output values to justify the performance of the algorithms and models. For the	Group 3: The suggestion is to include the implementation of SGD and ADAM algorithms and a brief introduction of backpropogation and the chain rule in the video presentation. Also, it would be better if add a brief demonstration about why and how you chose the training data for the NN model in the video presentation. For the summary paper, the suggestion is to add a introduction about ADAM algorithms and compare with SGD. Group 5: The suggestion is to add some visualisation for especially the architecture of NN model in the summary paper and use the dot points and key words to emphasize each key point. For the video presentation, it may be better if include a brief introduction of CNN model. Also, the mathematical background of the algorithms can also be briefly demonstrated to make the readers understand how the algorithms solve the problems step by step. Group 8: For the video presentation, the key parameters may need to be explained briefly. Also, for the summary paper, it may be better to use sections to distinguish each subtopic with emphasis (like bold or underline) of the key points or key methods. Generally, this project is good enough considering the time limits for presentation.
Group 3: Clear introduction about overfitting problems.Great and clear code presentation. Group 5: Nice introduction about different algorithms to solve fitting problems. Group 8: Have a good introduction to the neural network. Nice example implementation about the neural network. Have an introduction about the loss function	Group 3: I think they should introduce the theory part of deep learning at first instead of in the end. As a beginner, I am confused about what they are talking about at the beginning (the implementation part). Group 5: If I didn't miss any part of it, they mention nothing about deep learning it. They should put more things on the topic itself, not just the algorithm. And as a video presentation, I suppose the presentation should be more fluent. Group 8: Better than others. One extra option to all of the groups is that a better microphone is important ðŸ˜,

For Group 3, the video explains a step by step process of loading the Keras.jl framework using the predefined Julia wrapper (https://github.com/invenia/Keras.jl) into the Julia environment. The flow of the presentation was easy to follow for the reader and good that the video tied into the ReLU example as found in the Summary PDF of the page. Itâ€™s great to see that many frameworks and libraries are continuously being developed and ported over to the Julia ecosystem. Group 5 had a simple codebase used in their explanation. Group 8 had a comprehensive code and went through multiple examples to explain their topic.	All the groups should have expanded more on Strangâ€™s material to cover the â€˜whyâ€™ behind some of the algorithms, operations and techniques used for Deep Learning. While Gradient Descent methods were expanded in detail for Group 8, other areas to cover included loss functions (e.g. differences between Square, Hinge and Cross-Entropy Loss), Fast Convergence and Randomized Kaczmarz were mentioned in the chapters. For Group 3, content in the summary were copied from Wikipedia, with most of the code and presentation read from the Keras documentation (https://keras.io/getting-started/sequential-model-guide/). Unfortunately, there was little evidence any custom code was created to understand the topic in their own terms with their own examples found in the LALFD material. For Group 5, the Jupyter notebook needs more comments and text to explain the code further than supplying functions and formulas. For Group 8 needs to break up the flow of some of the sections, but overall a good presentation for the Deep Learning topic.
This first group has a good summary with sufficient knowledge points and I can easily understand it. Their code is readable and clear. The second group is better than first one, used Julia to apply the algorithm, which is clear and detailed. They have good examples in their video. The third group did an excellent job in their project, with good summary which is easy to understand. Besides, their code this clear and detailed, including suitable examples on neural networks	The first group should use Julia to do this project rather than just using python version from online sources. It would be better if the second group has a detailed summary which is easy to understand. They also need to find a better application using neural networks. For third group, the code of backpropagation part is too complicate and there should be a better version.

Group 3: You video was effectively in explaining the purpose of your code. the code covered was broad enough to give a introduction to how deep learning functions. Your summary effectively explained the usefulness of ML and displayed an interested visualization for convoluted machine learning. Group 3: The video effectively demonstrated how each of the algorithms could be implemented. The examples shown were simple enough to understand from an outside perspective. Group 8: The video gave a good explanation of deep learning and the algorithms used to run deep learning effectively. I can understand how the process is extended for more advanced cases from the simple cases given in the video. Also, i like the description of Adam as applying inertia to gradient descent.	Group 3: I found that your video did not explain how the code was running off of machine learning nodes. It would have been excellent to see how the code made use of the nodes, and how the nodes were updated using the code. Group 3: The video was a little bit lacking in machine learning content. You effectively explained the algorithms used in machine learning but i did not see examples of machine learning in your code. Your summary would have been greatly improved with a small image showing the process of back propagation. Group 8: You video and was good, but i feel like you spent a bit too long talking about edge detection. I think more time could have been spent discussing the process behind Adam and backward propagation and how it is applied to machine learning practically.
