Final Project Grading

Name of student

Amy Ko

Student ID

24978168

Readability *

	1	2	3	4	5	
Narrative unclear and/or difficult to read	○	○	○	○	◉	Narrative very clear and/or easy to read

Grammar *

	1	2	3	4	5	
Incorrect written grammar pervasive	○	○	○	○	◉	Excellent written grammar

Comments about readability and grammar

Data Partitioning

Appropriateness of data partitioning into training (choosing parameters), validation (choosing the best model), and testing (estimating performance on independent data) *

	0	1	2	3	4	
Did not partition the data	○	○	○	○	◉	Correctly partitioned the data

Comments on data partitioning

EDA and introduction

Quality of exploratory data analysis *

	0	1	2	3	
Did not perform EDA	○	○	○	◉	Performed a thorough EDA and presented appropriate and appealing figures that highlighted the interesting parts of the data

Comments on EDA

Very nice plots and good exploration :).

Modeling

Appropriateness of regression methods *

	0	1	2	3	
Did not appropriately choose or implement regression methods	○	○	◉	○	Made sensible decisions in terms of choosing and implementing regression methods

Comments on regression methods (e.g. did the student try to fit the same model for each voxel or different models for each voxel - this makes more sense)

You could have explained the models a bit more clearl (e.g. what does lambda do) and provided a bit more info with respect to the context. Are you using the same model for all voxels? Will you try to obtain different regularization parameters for every voxel?

Explained each of the model selection criteria (CV, ES-CV, AIC, AICc and BIC) *

	0	1	2	3	
Did not explain the model selection criteria	○	○	○	◉	Clearly outlined what each model selection criteria does and the relative pros and cons of each criteria

Correctly implemented and compared model selection criteria (including using the correct correlation criteria rather than MSE) *

	0	1	2	3	4	
Did not compare model selection criteria	○	○	◉	○	○	Correctly implemented the criteria, discussed strengths and weaknesses, and provided insightful figures for the comparison

Comments on implementation and comparison of modeling and model selection criteria

Good job explaining the criteria and offering a discussion on the strengths and weaknesses.

Your plots in figure 4 are a little low resolution (and the AICc and AIC plots do look a bit strange - they look much more reasonable for the validation data :p).

The default metric (if you use an inbuilt package rather than coding it yourself) for CV is MSE but this doesn't quite make sense given that we are trying to maximize correlation. Similarly, the CV part of ESCV would have been using MSE rather than correlation.

The paper for ESCV actually shows that it makes more sense to maximize tau (the L2 norm of the beta coefficients) rather than lambda itself... so your plots could have been with respect to tau.

Evaluation of model performance and diagnostic plots *

	0	1	2	3	4	
Did not evaluate model performance	○	○	◉	○	○	Thoroughly evaluated how well the models performed using correlation and provided insightful and appealing figures for diagnostic plots and model interpretation

Comments on model performance evaluation and diagnostic plots

I have a bit of an aversion to showing a lot of numbers in a table. Small tables are fine but I rarely actually take anything away from large tables. I would rather see figure 7 as an actual figure so that I an compare the models visually. The things I want to take away are (a) which voxels do the models work best for and (b) which type of model tends to work the best.

Your residual plots look good!

Interpretation of models *

	0	1	2	3	
Did not try to interpret the models	○	◉	○	○	Provided a thorough interpretation of the models

Comments on model interpretation

Your interpretability discussion focused more on stability than actually figuring our *what* the models are capturing in terms of how the voxels respond to the images.
Some suggestions for things to analyze for interpretability are whether there are gabor filters that seem particularly important for a voxel and if so can you find patterns that seem to match the filters in the images that most excite the voxel?

Evaluation of model stability *

	0	1	2	3	
Did not discuss model stability	○	○	○	◉	Reasonable explored and discussed model stability

Comments on model stability evaluation

Great job showing both feature stability and model performance stability. I would have liked to have the x-axis in figure 9 have the same scale.

How well did the students model perform on val_feat (once I have completed estimated performance of all student's models you will receive a relative score out of 5) *

correlation of 0.627

Reproducibility and github stuff

Did the student provide all files and instructions in their github repo necessary for reproducing the results and report? *

	0	1	2	3	
Did not provide anything required for reproducibility	○	○	○	◉	Everything was provided and clearly named/described

Comments

Other general comments