Presenting your data science project

Tips and tricks to help you give a great presentation

The Data Story Arc

Context/Question	Process	Results	Real World Application
What is the question you are trying to answer and why is it important to answer the question.	How did you go about answering this question. • Data Cleaning • EDA • Feature Engineering • Feature Selection • Model Selection	What did you learn about your question from your model? • Evaluation Metrics • Feature Importance • Why your model was or wasn't successful?	Now that I've completed this project, how can I use the findings to make a real world impact?

Data Science Questions

How do you turn a big idea into a specific question that can be answered using data science methods?

Example: *"A food cafeteria has a lot of food waste because there are many days they make much more food than the number of customers who come in. Other days they find themselves running out of popular items."*

How can we reframe this as a data science question?

Presentation Flow

1. **Give the context of the project -** What is the big question you are investigating and some hypothesis about that question.
2. **Show a preview of the results -** Give them enough to keep their interest throughout the more difficult parts of the presentation.
3. **Familiarize the dataset -** Share relevant parts of your EDA.
4. **Outline the process -** How did you go about getting your results?
5. **Deep dive of the results -** Help them understand how good your model is or why it isn't great.
6. **Real world application -** Who can use your model and how would they use it?

Setting up the Context

1. What is the big question/problem?
2. How did this translate to a specific data science question?
3. What is your overall goal?
4. What data did you use?
5. What hypothesis do you have about the data? (*Do you think some variables will be more important than other ones?*)

Show them a preview of the results

By showing your results at the beginning, you can help to keep the audience intrigued throughout the tougher parts of the presentation.

“I was able to predict the number of daily customers at the cafeteria within 5% accuracy of the actual number.”

“Predicting the number of customers every day is difficult, but we did identify some important variables that can help us reduce waste.”

This is not a deep dive of the results, just enough to whet their appetite.

Dive into the data

This is where you go through important EDA graphics to help the audience become more familiar with the data.

- Distributions plot of the target variables
- Highlight variables that domain knowledge makes you believe are important
- Any big data cleaning steps that will greatly impact your model

Everything that you go over in this step should contribute to the overall data story. Don’t tell us about a random variable unless it is important to that story.

Describe the Process

- Data Pipeline
- Data Cleaning
- Feature Engineering
- Feature Selection
- Model Selection

The depth in which you dive into each of these depends on your audience, the amount of time you have, and them impact it has on your data story.

Deep Dive of the Results

You previously gave a preview of your results, now here you can expand.

What evaluation metric did you use to evaluate your model and why?

What led to your best model performance and why?

What were important features in your model and how does this correlate to what you found in EDA?

Real World Application

How can other people use your model?

You should have thought about this earlier when deciding how to build your model, but now you are explaining in detail how this can be used, and the impact it would have on the users.

Designing Your Slides

- People can not effectively read your slides and listen to you at the same time. ***Are you overloading them with too much to process?***
- People often become distracted and will drop their attention from your presentation. ***Does your presentation make it easier for them to engage again?***
- Presentations are often passed around after the presentation. ***Can someone pick up your deck and understand it without you being there?***

Application of those ideas

- Include a title for each slide.
- Do put entire paragraphs on a slide.
- A picture is worth a thousand words
- Make sure all of your graphs are properly labeled.
- Summarize main takeaways from graphics

What to say?

- Never read directly from a slide.
- Never read a list off that they can easily read.
- Just because it took you a lot of time to do, doesn't mean it should take a lot of time to talk about.
- Regularly make eye contact to gauge engagement.
- Practice! Practice! Practice!