4/26/2021

Communicate results:

1. Know your audience
   In a professional setting this might include: team manager, business stakeholders, data/engineering team, public
   Tailor your communication appropriately
   Technical jargon may confuse the public
   Over-explaining to your manager could suggest you think he's stupid

2. Target your presentation – be clear and complete
   a. Your understanding of the problem
   b. Measure the impact (if possible)
   c. What data was available to make the model/analysis
   d. Initial solution or hypothesis
   e. Solution/model – examples and visualizations
   f. Impact and state a clear action, where appropriate put in context
   g. Discuss future avenues of research

3. Avoid common errors:
   a. Don't gloss over or omit any key assumptions
   b. Don't recycle presentations for different audiences
   c. Don't show visualization without context
   d. Don't save all the insight until the end – processes are iterative and piecewise
   e. Include an abstract or executive summary with key findings at the top
   f. Include an appendix at the back with additional technical details and supporting materials (mathematical equations, literature review, code examples)
   g. Invite feedback

Tell a story with your data.
   Use a narrative framework.
   Personalize to your target audience if possible
   Give evidence that you are solving a problem that exists that can be fixed by your analysis
   Don't expect charts to speak for themselves
   Use empathy with the audience to guide you:
        If you were in the position of the audience, what would you want to know?
        What information would you find persuasive?
   Bring your experience to bear when possible
   Case studies may help to illustrate difficult points
   It may help to find new ways to present data that more compelling than past methods – use more than one method

What it is interesting as an audience member, not necessarily as an analyst?
Figure out the end before the middle
Write it down, fix it later
What is the essence of the story? What is the most economical way of telling it? Build from there?

Technical information should be appropriate for the audience

Don't describe your results as a sequence of activities – this information may be included in an appendix

Don't include unnecessary graphics just because they are cool—all graphics should serve a purpose.

Interactive graphics can be especially useful for time data (animations).

Games be used to illustrate more complex interactions of variables.

How could your outcomes be included in actions?

Dashboards
      Present data interactively, users can manipulate it themselves
      Easy to read and interpret

Time series forecasting/models
      Trends
      Seasonality (predictable, short-term cycles)
      Cyclical components (long-term cycles, ~decades)
      Noise (error)

Types of forecasts:
      Naïve – using the most recent value to predict the next value
      Averages – mean of all historical data
      Seasonal naïve – repeat the last seasonal cycle

Regression-based analysis – autoregression (predicts future data based on one or more preceding values – lag), and traditional regression, ARIMA – auto regressive integrated moving average

Smoothing methods – moving averages/exponential smoothing

For train/test split don't do it randomly: split in time: the first 80% of the data is the training data, the last (most recent) 20% is the test data