A Statistical Consultant’s Experience with Residuals

Here are some possible options for a title…

**Checking Model Assumptions with ggResidpanel**

**Introducing ggResidpanel: An R Package for Easy Visualization of Residuals**

**Visualizing Residuals with ggResidpanel**

As consultants on a wide variety of projects across many majors, a common oversight we encounter is a failure to examine the residuals. Clients are often unsure how to produce appropriate plots of the residuals or do not know which plots to look at. This is particularly true when the client is performing the analysis in R. We were inspired by the residual panel plots in SAS to create an R package that easily provides users with a similar panel of plots. The ggResidpanel package in R is intended to give a single view of diagnostic plots for checking the key underlying assumptions of linear models. Other plots are included to provide a straightforward process to identify outliers and influential points while connecting findings back to the data. A variety of options gives the user the ability to choose from a selection of plots to display in a window. This includes SAS’s default residual panel as well as R’s default plots for linear models. Other options have been included to ensure that this package can also be applied to deviance or Pearson residuals if the user inputs a generalized linear model. In the future, we intend to use Plotly to add an option to make the plots interactive, which will allow users to easily identify points.