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*Shaken: A Statistical Analysis on Induced Seismicity*

For my project, I attempted to build a model that would predict the cause of induced seismicity by looking at different measures of an earthquake. To do this, I collected data on ninety earthquakes, split into three groups of thirty by cause. One cause I looked at was geothermal drilling, another was wastewater injection, and the third was conventional oil and gas drilling. I collected data on depth, magnitude, and tectonic setting. My data mostly came from the Human-Induced Earthquake Database, and what I couldn't find there, I looked for on various other earthquake databases. I then put the data into a spreadsheet and ran it through a tree model I built in R, a statistical modeling program. I came to a few different conclusions. The biggest one was that it is possible to determine the cause of an earthquake using statistics, to a certain extent. However, not all of the models I ran were as accurate as I had hoped. This means one of two things: either the cause of induced seismicity cannot be accurately predicted by a statistical method, or I chose poor measurements to predict with. Since I did have some success with certain models I ran, I think that the latter is more likely. My overall conclusion is this: I was able to build a model that has the potential to predict the cause of induced seismicity, but it needs refining before it can be a consistent and accurate predictor.