Analyzing Stringer dataset:

- Literature review to further understand the experiment conducted to obtain the data.
- Meanwhile, analyzing the position of neurons from both data to determine if they are obtained from the same experiment, same neurons.
- They are not!!
- Conducting literature review to determine which data to work with.
- Deciding to work with Orientation data.
- Further analysis to understand the meaning of each col.
- Generating plots and visualization to construct hypothesis that can be answered by the data.
- Literature review to construct our question.

!! We have a question !!

What is the architecture of the orientation selective neurons in the primary visual Cortex of mouse?

- exploring the data and studying data analysis approaches to first verify that neurons prefer a specific orientation.
- One metric to investigate is, Orientation Selective Index OSI, but first, generate tuning curves, fit them, get OSI.
- Easy, no…..
- to fit the tuning curves, we first used von mises fitting, however out of the 20,000+ neurons we had many neurons that we couldn't fit which were bimodal neurons
- Ok exclude them and get the OSI. Done we have a 3d visualization of the distribution of neurons in the v1 of the mouse.
- Wait no architecture, search the literature !!

!! Hypothesis generation !!

The architecture of the selective neurons in the primary visual Cortex of the mouse is "Salt and pepper".

- Project TA meeting, your fitting is not the optimal one, try something else.
- how about, sine wave, worst, the local minimum is considered as the preferred angle.
- ok, more complex, mixture gaussian, no - don't know the problem with it exactly-
- what now, ok technically speaking we are rotating a square, hence, 0 == 360, 90 == 270 so why don't we pool the data so that the angles range is 0-180
- ok now, lets try Polynomial regression !!!! great, degree 7 works fine.
- Wait the OSI is off
- new orientation selectivity metric. Circular variance.
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- They are not!!
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