Why Are Time Series Special?

Ex. Selling ice cream

* In a non-time series, there may be a correlation between an increase in temperature and the amount of ice cream sold. You can predict using what tomorrow’s temperature
* “Inter polation” has a lot of data points within a range
  + In a time teries, they base the prediction based off of how many ice cream cones were sold the previous day, so temperature is no longer a variable
  + If t is a representation of time, Ct is a function of cones on time
* “Extrapolation” predicts data outside the range of data we currently have
* Time series is almost always extrapolation
* Time series is future orientated
* The past is less importat in time series because the past or present is never happen again
* Margin of error increases as you get further from the known data
* Error grows in a cone-like way

Autocorrelation and Partial Correlation

Ex. Predict ave rage monthly price of salmon

* St =avg price this month
* St-1 = avg price last month
* St-2 = avg price two months ago
* The measurement of of some value at a time period depends on the measurement of that value at the previous time period, the time period before that, and etc
  + CORR(St-2, St)