

Cherry Blossom Prediction Competition 2025

For my entry, I decided to make my predictions based on a nonlinear model. I used splines instead of a linear model. The generalized additive model with splines allows for a more flexible fit of the data. Bloom data is not naturally linear so using a more flexible, nonlinear models allows for a more accurate fit and ultimately, a more accurate prediction. The splines allow for a smoother prediction. As compared to the demo analysis of this project, some of the confidence intervals were smaller and some were bigger. My predictions were based on a 95% confidence level. I regressed the bloom date onto the year and location, using the past bloom dates of each location in an attempt to predict the bloom dates of the future.

In my model, Washington DC had a five day confidence interval from March 27th to April 1st with a predicted bloom date of March 30th. In the demo, Washington DC had a 26 day confidence interval with a predicted bloom date of March 29th. As for DC, my model appears better than the demo.

For Liestal, my model predicted a bloom date of April 5th with a confidence interval of four days from April 3rd to April 7th. The demo analysis predicted a bloom date of April 3rd with a 26 day confidence interval. In this case, my model may be better.

In the city of Kyoto, I predicted a bloom date of April 4th with a buffer of four days between April 2nd and April 6th. The demo analysis predicted a bloom date of April 3rd with a 26 day window at the 90% level.

Up in British Columbia, I predicted the cherry blossoms to bloom on March 30th, within a 16 day window of March 22nd to April 7th. The demo model predicted the trees to bloom on March 31st in a 12 day window. My model appears less precise in Vancouver.

The last city is New York, New York. My model predicted a bloom of March 30th with a confidence interval of 28 days between March 16th through April 13th. The demo predicted a 12 day confidence interval with a predicted date of April 1st. My model had a much larger interval this time.

The nonlinear model that I found to predict bloom dates at the 95% confidence level appears to be more precise in three of the five cities. The three cities in North America were predicted to bloom on the same day, which I believe makes sense. I believe the nonlinear model allows for a more flexible fit and more accurate predictions.