

Week 8 Code Examples, CSC 400, Spring 2024

1. Time series – regular
2. Time series – irregular
3. Cross validation
4. ROC
5. Visualization

Time Series (Regular)

We covered all these topics in MTH 325, so let me point you to those resources.

MTH 325 Lab #8: <https://www.betsymccall.net/prof/courses/spring23/daemen/325lab8.pdf>

MTH 325 Lab #9: <https://www.betsymccall.net/prof/courses/spring23/daemen/325lab9.pdf>

MTH 325 Lab #10: <https://www.betsymccall.net/prof/courses/spring23/daemen/325lab10.pdf>

MTH 325 Optional Lab #2:

https://www.betsymccall.net/prof/courses/spring24/daemen/325lab_opt2.pdf (smoothing methods)

Time Series (Irregular)

If the time series is irregular, modeling it is often done with regression methods. Non-parametric or nonlinear regression methods can be used (or some of the smoothing methods above). Non-parametric examples are here: https://www.betsymccall.net/prof/courses/spring24/daemen/325lab_opt1.pdf

Cross Validation

We have seen examples of cross validated results in several of the models to date.

ROC

MTH 325 Lab #5: <https://www.betsymccall.net/prof/courses/spring23/daemen/325lab5.pdf>

I'm also including a number of other additional resources below that will be useful.

Resources:

1. <https://a-little-book-of-r-for-time-series.readthedocs.io/en/latest/src/timeseries.html>
2. <https://www.statmethods.net/advstats/timeseries.html>
3. <https://www.simplilearn.com/tutorials/data-science-tutorial/time-series-forecasting-in-r>
4. <https://www.geeksforgeeks.org/time-series-and-forecasting-using-r/#>
5. <https://viz.datascience.arizona.edu/2021-time-series-intro/time-series-forecasting.html>
6. <https://boostedml.com/2020/05/an-introduction-to-time-series-smoothing-in-r.html>
7. <https://online.stat.psu.edu/stat510/lesson/5/5.2>
8. <https://rpubs.com/SunnyBingoMe/sarima>