

# Ryan Bieber

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## Summary

Data Scientist with a M.S. in Economics with 2 years of professional experience using advanced analytical techniques to analyze data.

## Experience

IBM, Data Science & Technology, Finance. Rochester, MN. 07/2019 – Present

### **Squad Lead Data Scientist**

- Created a modelling application using R inside a docker container that is able to forecast, in parallel, any series given to it through a series of back-testing and error minimization algorithms to produce the most accurate forecast possible with the given data.
- Pushed for using cloud deployment strategies with a CI/CD(Jenkins) framework of being able to have your entire application be rebuilt all from a git push trigger.
- Mentored, taught, and assisted my squad of 7 people in using data science fundamentals of programming with Python, R, and SQL. Along with statistical fundamentals of regression techniques(random forest, glm, ols), machine learning(KNN, clustering, neural nets, etc.), and time-series techniques(ARIMA, exponential smoothing, tbats, etc.).
- Created a REST API in R that was housed in a kubernetes cluster using a docker that used webhooks and the Trello API to improve process management for over 10,000+ people by tracking their tasks every day and being able to visual those inside a dashboard.
- Worked with teams across finance in IBM to develop and implement forecasting models to help improve workflow and reduce time spent by the analyst.
- Reduced development time for modelling applications by creating processes that my team was able to use and replicate to standardize modelling in R.
- Pushed for an iterative design framework to push out applications in a MVP stage and to iterate on that design so our stakeholders weren't waiting empty handed when we had results that could be used.

University of North Dakota, Economics Department. Grand Forks, ND. 05/2017 – 05/2019

### **Graduate Research Assistant**

- Worked with professors doing research in the fields of macroeconomics, financial econometrics, and housing prices across the US by using Stata and R to analyze data.
- Tutored undergraduate and MBA's for 2 years in statistical methodologies along with basic economic principles.

InfoTech, Consulting. Gainesville, FL. 05/2018 – 08/2018

### Consulting Internship

- Worked with PhD consultants in class action lawsuits to help prove if collusion was evident by using SAS and regression techniques to show a “but-for” price and the actual price with the difference being the amount gained by collusion.
- Analyzed millions of rows of data inside SAS and gathered key insights for our economic litigation team to look into more deeply as to why these anomalies were happening.

Mayo Clinic, Advanced Image Research. Rochester, MN. 05/2015 – 08/2015

### Research Fellowship

- Analyzed 3d image scans of livers, hearts, and kidneys inside Matlab. The data was then sent through a series of ordinary differential equations(ODE's) to determine the stiffness of the body parts.
- Researched the effect of passing waves through a plate of varying thicknesses to simulate the wall of the heart to determine if it is possible to measure heart stiffness without going through an invasive process. (See [Lamb Waves](#))

## Technology and Data Toolbox

**Technology:** Kubernetes, AWS, Docker, Openshift, IBM Cloud, R, Python, SQL, Cognos, HTML/CSS/JS, R-Shiny, Plumber, Django, Keras, Tensorflow, Jenkins, CI/CD and Spark.

**Data Toolbox:** Deep learning, time-series, data mining, visualization, regression, ensembling, machine learning, ETL, Rest API's, cloud deployment, web applications and NLP.

## Data Science Projects

### [TimeSeriesCatchAll \(R Package\)](#)

- This package allows someone with less experience in dealing with time-series data to be able to model and choose the best one based on an error metric of their choice. It will coerce outliers, impute missing data, model over 1000 models, backtest automatically based on how far you are looking ahead, and finally forecasting based on the best model.
- I have a Dockerfile set up as well as a template repo to showcase how easy it is to use this package along with a template repo to deploy an application in a cluster(AWS, Azure, GCP).

### [SIR Model \(R Shiny\)](#)

- A shiny application that models the classic SIR equation to show the user how playing with certain variables in the equation will ultimately increase or decrease the stress of an epidemic over time.

### [Docker Example Repo for Projects](#)

- An example repo of a repo that contains everything you need to start putting your models and forecasts into Docker containers. All someone needs to do is place their scripts into the files and press play.

## Education

University of North Dakota. Grand Forks, ND. 2017 – 2019  
**Masters in Science, Applied Economics** GPA 4.0

University of North Dakota. Grand Forks, ND. 2013 – 2017  
**Bachelors of Arts, Economics & Bachelors of Science, Mathematics** GPA 3.65

## Awards

IBM F&O Recognition 09/2020 – In recognition in supporting IBM and Finance and Operations strategic priorities.

IBM Special Equity Award 05/2020 – For the continuing display of leadership and pursuit of knowledge above and beyond what is expected.