# Nathan Basch

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## WORK EXPERIENCE

**Indigo Ag,** Boston, MA                                                                                                    Jun 2020 – Present
*Data Scientist*
- **Modeling**: Developed and owned an end-to-end Random Forest model that accurately predicts a field's agricultural emissions given weather, soil, and satellite imagery data. Produced comprehensive results and error metrics in an interactive report using R Markdown, significantly increasing visibility and engagement. Delivered emissions inference for millions of fields over multiple years to customers participating in sustainability programs.
- **Rapid prototyping**: Independently built several customer-facing interactive maps and visualizations using R Shiny ([example](#)), deploying prototypes via Docker and Posit Connect. Led cross-functional teams, including commercial, product, and engineering, in scoping and developing final features.
- **Data Engineering:** Created internal data assets encompassing local grain prices, elevators, and transportation. Unified over 1 billion rows of misaligned third-party vendor data, consolidating grain prices across vendors and identifying grain elevators situated along rail lines or barge routes. Developed a robust system to update our internal grain facility database in response to market changes. Established strong relationships with data vendors and implemented automated monitoring to ensure consistent and accurate data delivery.
- **Agriculture Expertise**: Cultivated deep subject matter expertise through collaborative partnerships with grain marketing experts. Leveraged domain insights to enhance quantitative research and models.

**The Brattle Group,** Boston, MA                                                                                         Sep 2016 – Nov 2019
*Senior Research Analyst*
- Consulted in complex litigation related to antitrust and intellectual property; conducted statistical analysis of economic damages and drafted expert testimony on more than 30 cases
- Executed on all aspects of project lifecycle, including scoping and managing project, interfacing with clients and producing comprehensive deliverables
- Developed an internal web application using Python and R Shiny to enable clients to parse through millions of emails for white-collar crime investigations
- Built deep subject matter expertise on United States Postal Service mail operations, leveraging that expertise to visualize and model seasonality in mail volumes
- Developed a neural network algorithm on sports performance data and used R Shiny to create an interactive application for client to explore results

**Protagonist Technology (formerly Monitor 360),** Washington D.C.                                            May - Aug 2015
*Analytics Intern*
- Consulted for government organizations; performed text analysis of newspaper articles in R to analyze public perceptions of the Mexico-U.S. border

## SKILLS

- **Technical**: Machine Learning (tidymodels, scikit-learn), Data Visualization (ggplot2), Mapping (QGIS, leaflet) Data Wrangling (dplyr, data.table, pandas)
- **Programming**: R, R Shiny, R Markdown, Python, SQL
- **Tools**: Git, Docker, Looker, QGIS, Posit Connect

## EDUCATION

**The George Washington University**                                                                                      Washington, D.C
*Bachelor of Science in Economics, Minors in Statistics, Jazz Studies*                                              June 2016
**Honors**: Summa Cum Laude, ODE Economics Honors Society
**Awards**: GW Outstanding Academic Achievement Award, Steiner and Meyer Music Scholarship