



Date Range

2011-01-07 to 2015-12-25

Bike Shop (Customer)

30 items selected

Forecast Mode

On

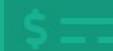
Forecast Horizon

2,000



Orders

\$71.0M

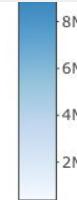


Sales

1.1



Ratio, Mountain to Road



Building Predictive Web Apps

For Business

Matt Dancho & David Curry
Business Science Workshop

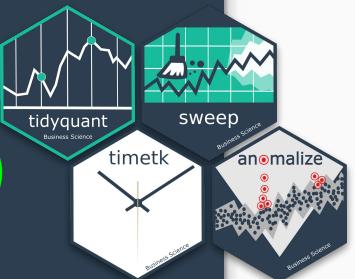




About Me

- **Founder**
(Business Science)

- **Creator**
(R Packages)



- **Educator**
(I teach DS4B)



Matt Dancho

Founder of Business Science, Matt designs and executes educational courses and workshops that deliver immediate value to organizations. His passion is up-leveling future data scientists coming from unconventional backgrounds.

My Journey

Becoming A Data Scientist

I struggled with my own learning path

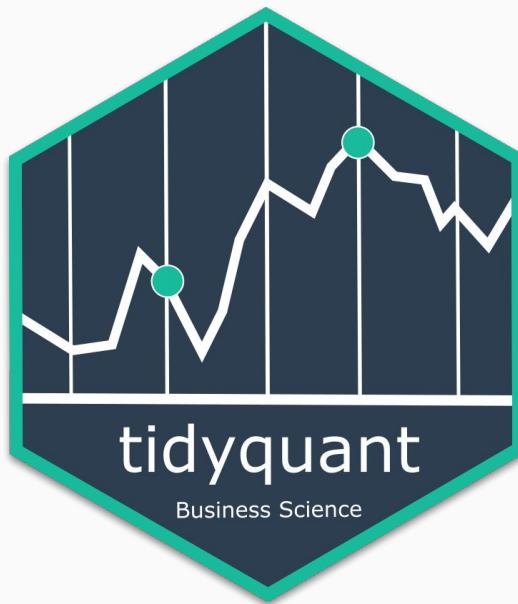
- It took months to learn basic concepts
- Difficulty connecting to business
- Unlimited Options





What worked for me?

When I created **tidyquant**, I learned more than any course would ever teach me.



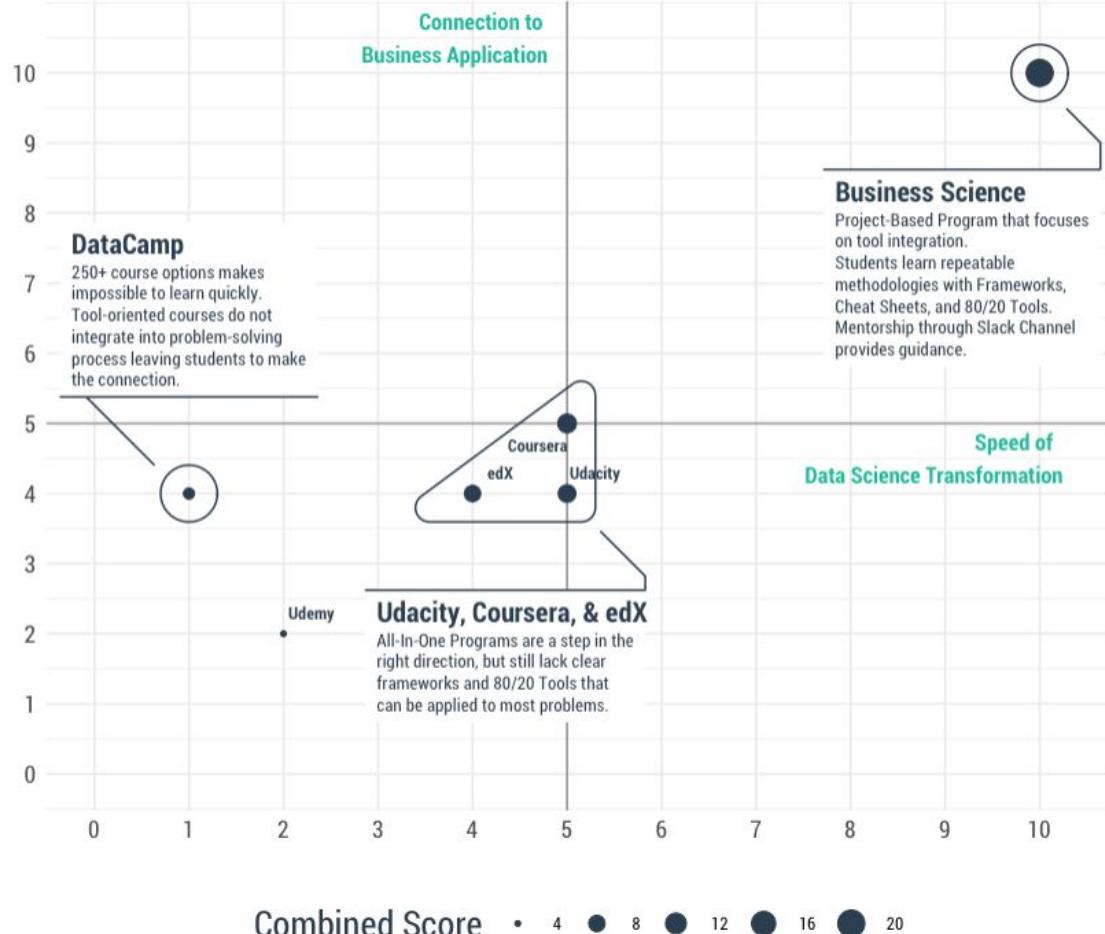
Helping You Grow

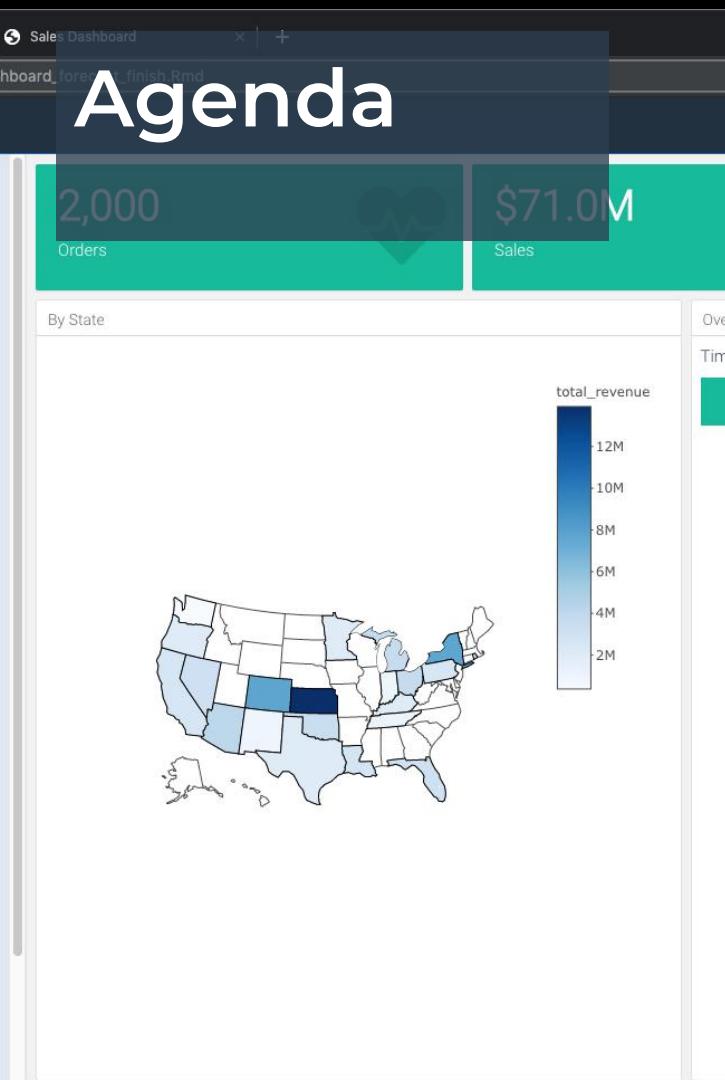
In a **changing and challenging** environment

I created Business Science to help people like us

- Project-Based Learning
- 80/20 Tool Integration
- Repeatable Systems & Frameworks
- Mentorship

How Education Programs Facilitate Your Data Science Transformation

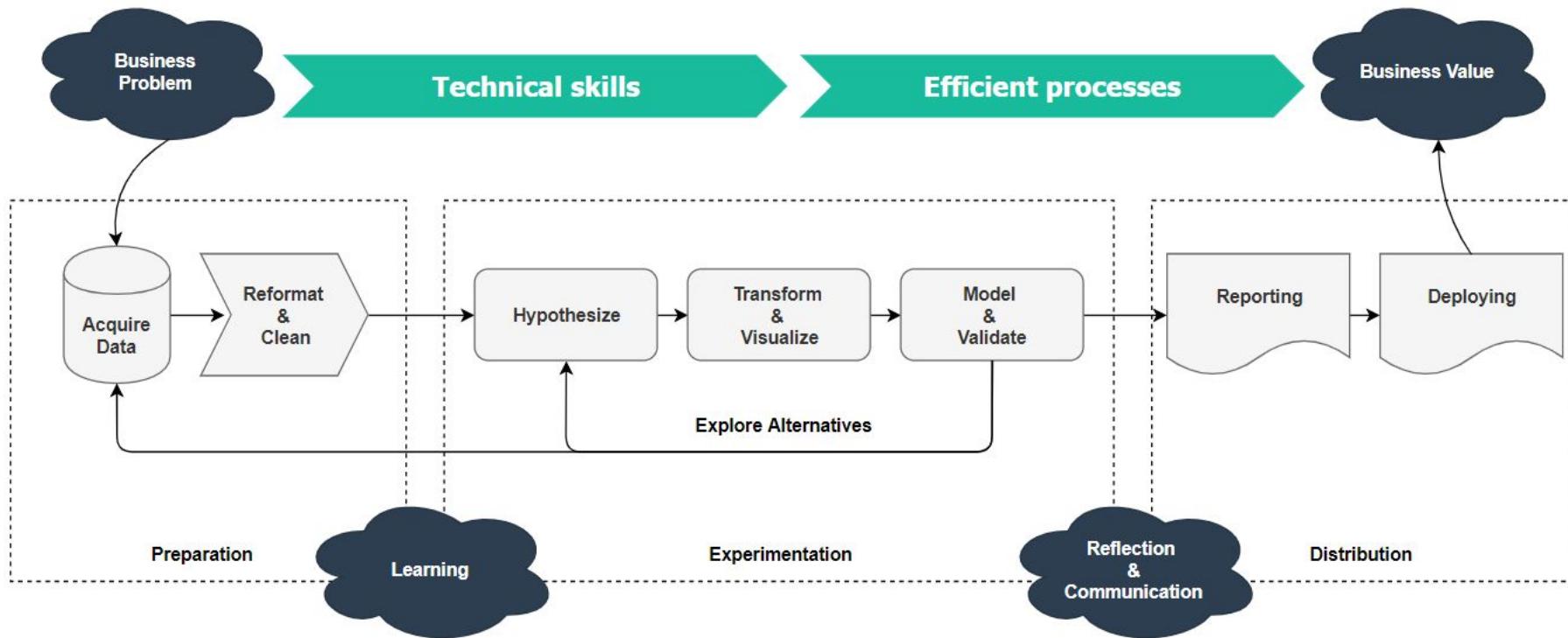




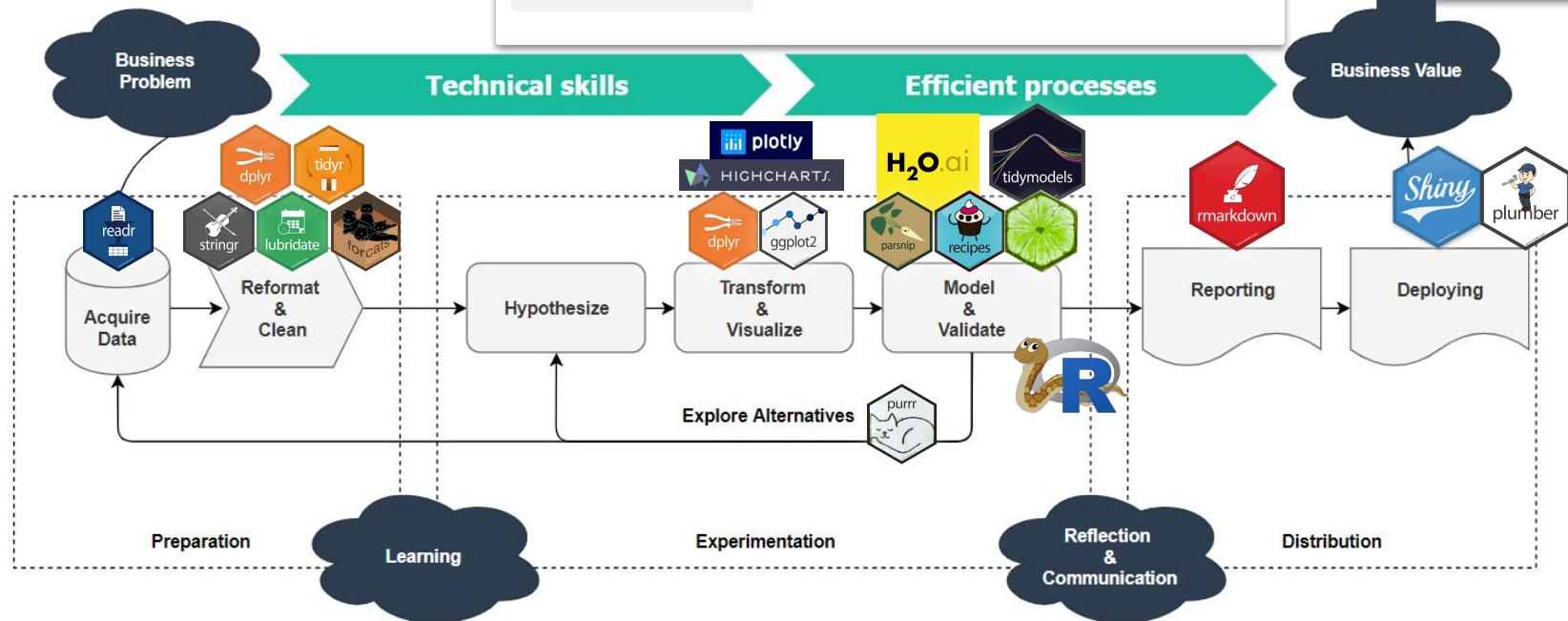
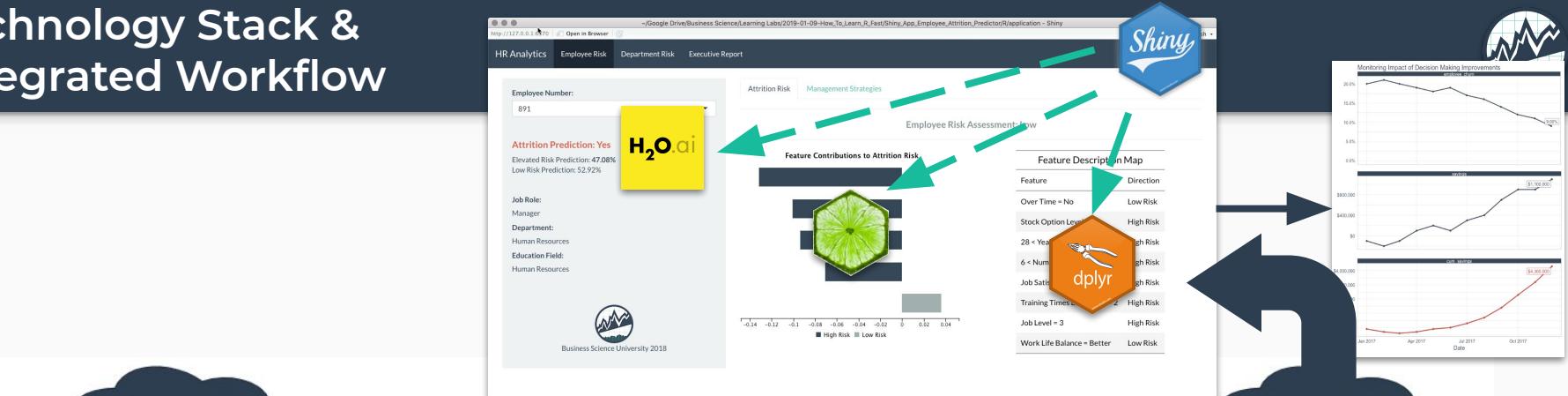
- **Evolution of Full-Stack Data Science**
 - What is it?
 - Business Value
- **Business Example**
 - Demand Forecasting
- **Analytics Product Demo's**
- **App Build Process**
 - Sales Dashboard w/ integrated demand forecasting
- **How I can help you become a Full-Stack Data Scientist**
 - Marketable
 - High-Impact
 - Transformative



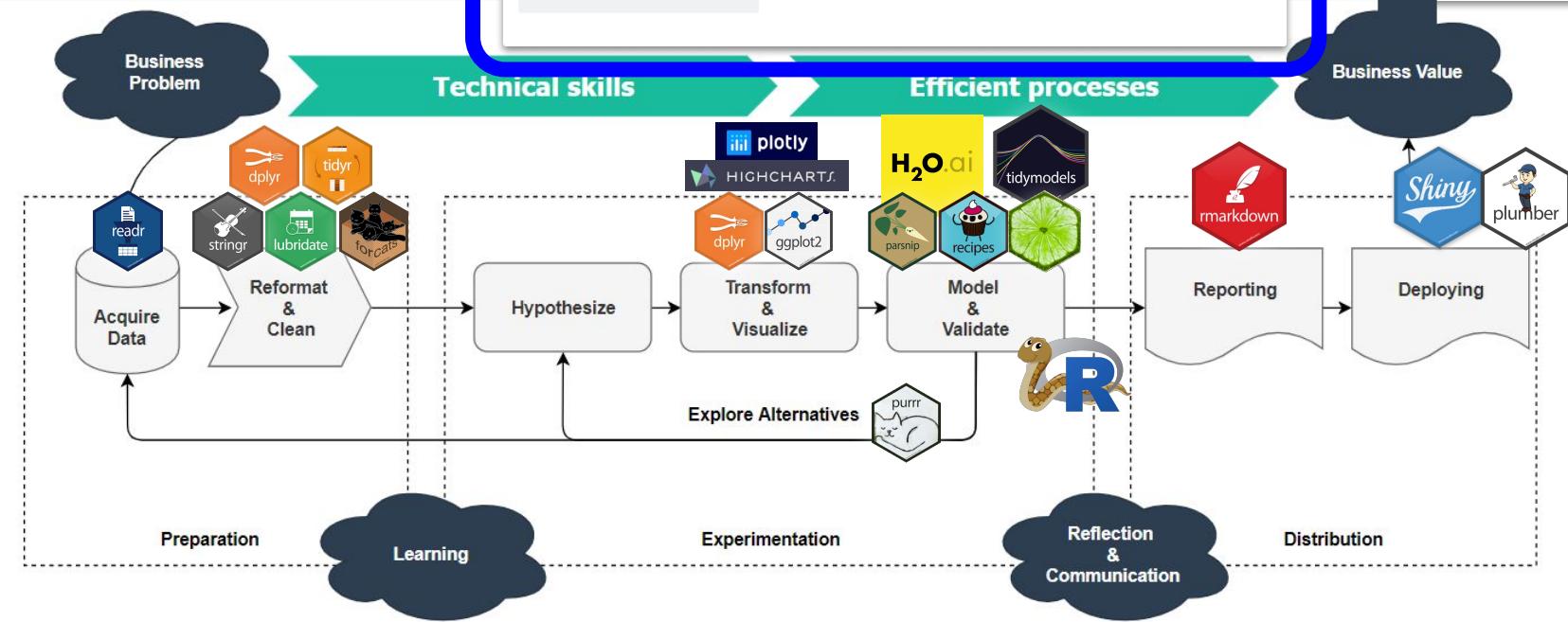
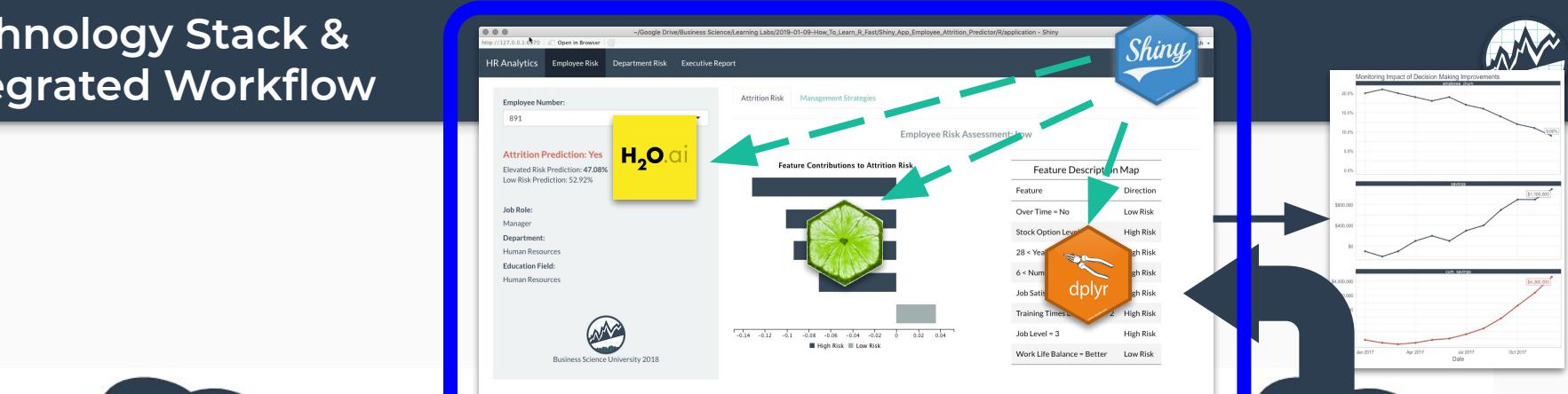
Data Science Workflow



Technology Stack & Integrated Workflow



Technology Stack & Integrated Workflow



Evolution

Full Stack Data Scientist



Environment is Changing

Yesterday

Hire data scientists

Build a DS practice

Leverage at **leadership level**

Generate **predictive insights**

Centralized Predictive
Intelligence

Now & Future

Productionize data science

Accelerate **products** from DS practice

Integrate at **all levels** of the organization

Generate **ROI**

Scaled Predictive
Decision Making



Evidence in Favor of Full-Stack Data Science



5 of 6

LinkedIn

Most Important Skills

The most in-demand hard skills

1. Cloud Computing
2. Artificial Intelligence
3. Analytical Reasoning
4. People Management
5. UX Design
6. Mobile Application Development
7. Video Production
8. Sales Leadership
9. Translation
10. Audio Production
11. Natural Language Processing
12. Scientific Computing
13. Game Development
14. Social Media Marketing
15. Animation
16. Business Analysis
17. Journalism
18. Digital Marketing
19. Industrial Design
20. Competitive Strategies

Data Science

+
Web Applications

=

Full-Stack Data Science

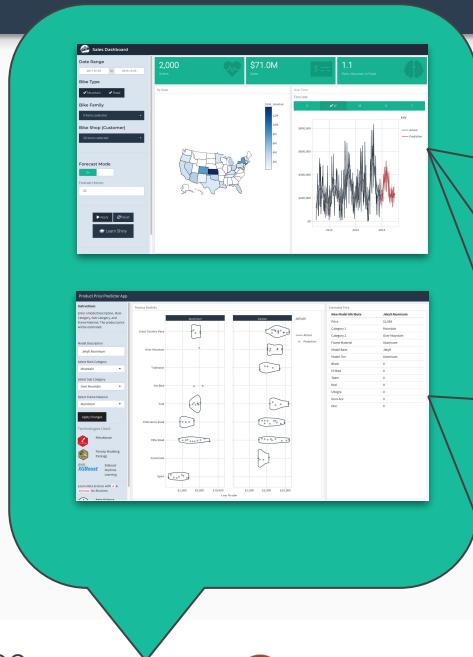


Full Stack
Data Science



Build Predictive Applications

Businesses leverage data science **products that scale** across the organization



Business Example

How does an organization
generate ROI from an app?

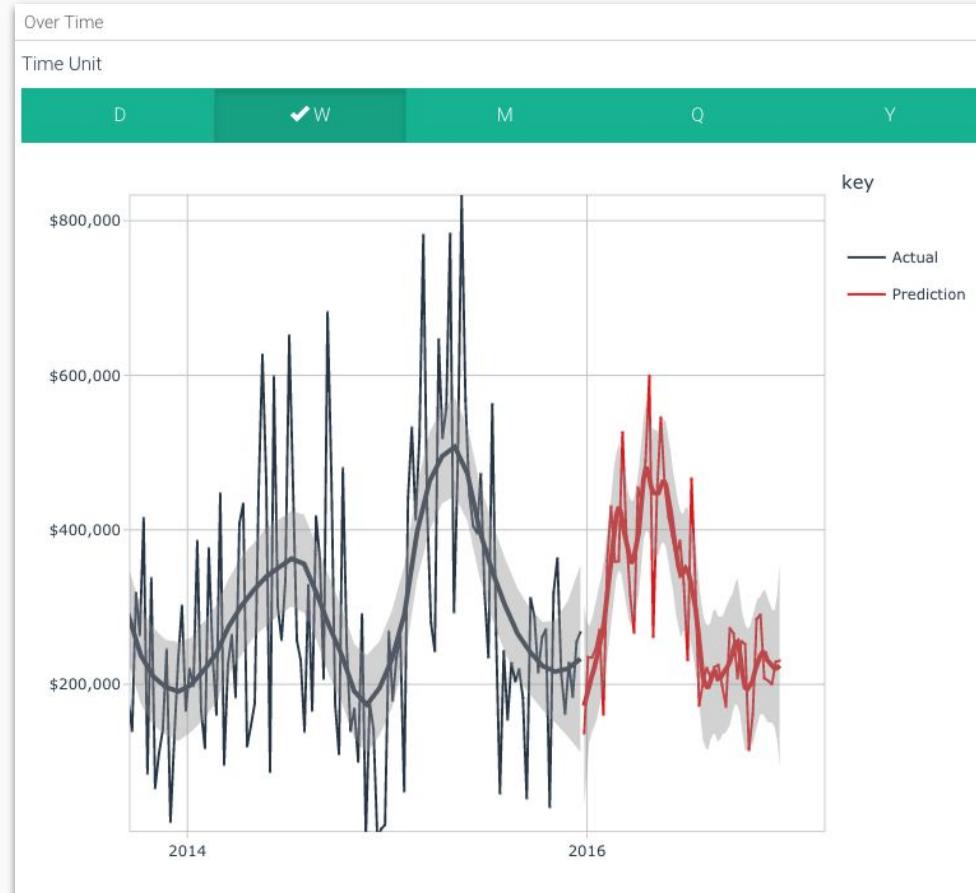


Demand Forecasting

Affects every part of the business

Most organizations use a 3-month moving average

An improvement of 20% can save an organization millions per year





Demand Forecasting

25% increase in accuracy

If organization generates \$1B/Yr

Error decreased from 20% to 15%

\$50M/Year Closer to Target

- Raw Materials more accurate
- Inventory more accurate
- Staffing more accurate



\$15M

per year

More accurate materials purchases

Less overtime in seasonal periods

Better planning and efficiency

App Demo

Experience the Result

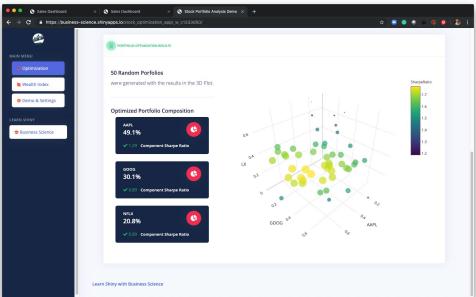
Deploying Apps

Estimated ROI of \$1B/yr organization

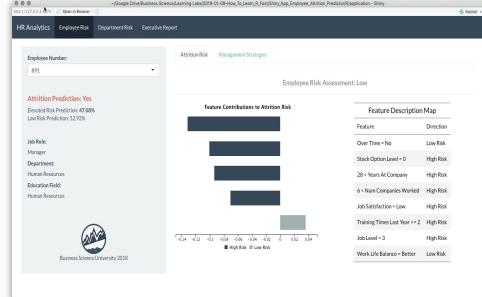


Full-Stack Data Science

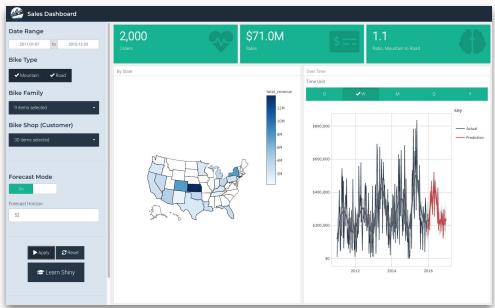
Scales Better Decisions



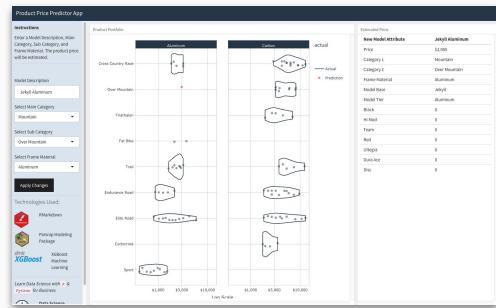
Optimize Financial Portfolios
ROI \$20M/yr



Reduce Employee Churn
ROI \$5M/yr



Demand Forecasting
ROI \$15M/yr



Product Price Optimization
ROI \$5M/yr

Portfolio Optimization App

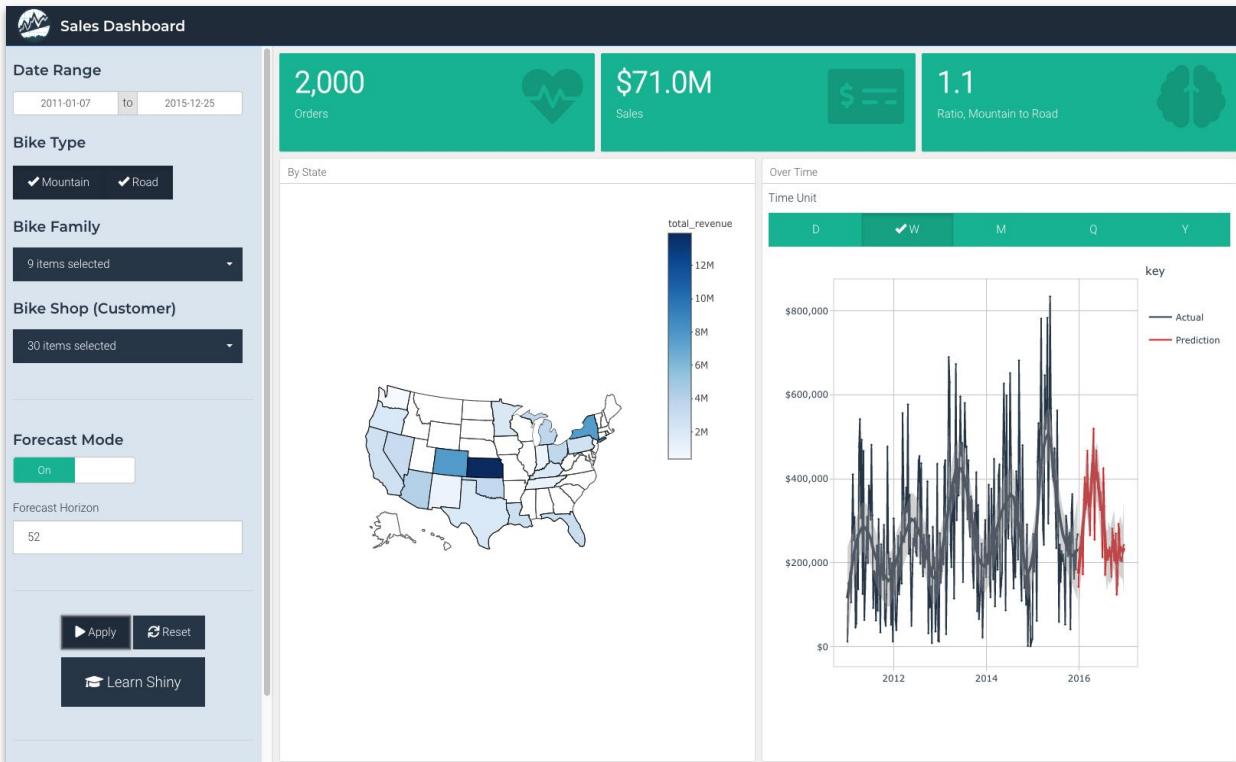


Skill Level: **Intermediate**

Build Time: **3 hours**

Technologies:

- Flexdashboard
- Shiny
- Plotly
- Parsnip & XGBoost



Demand Forecasting
ROI \$15M/yr

Demo: https://business-science.shinyapps.io/sales_dashboard_demand_forecast/

Portfolio Optimization App

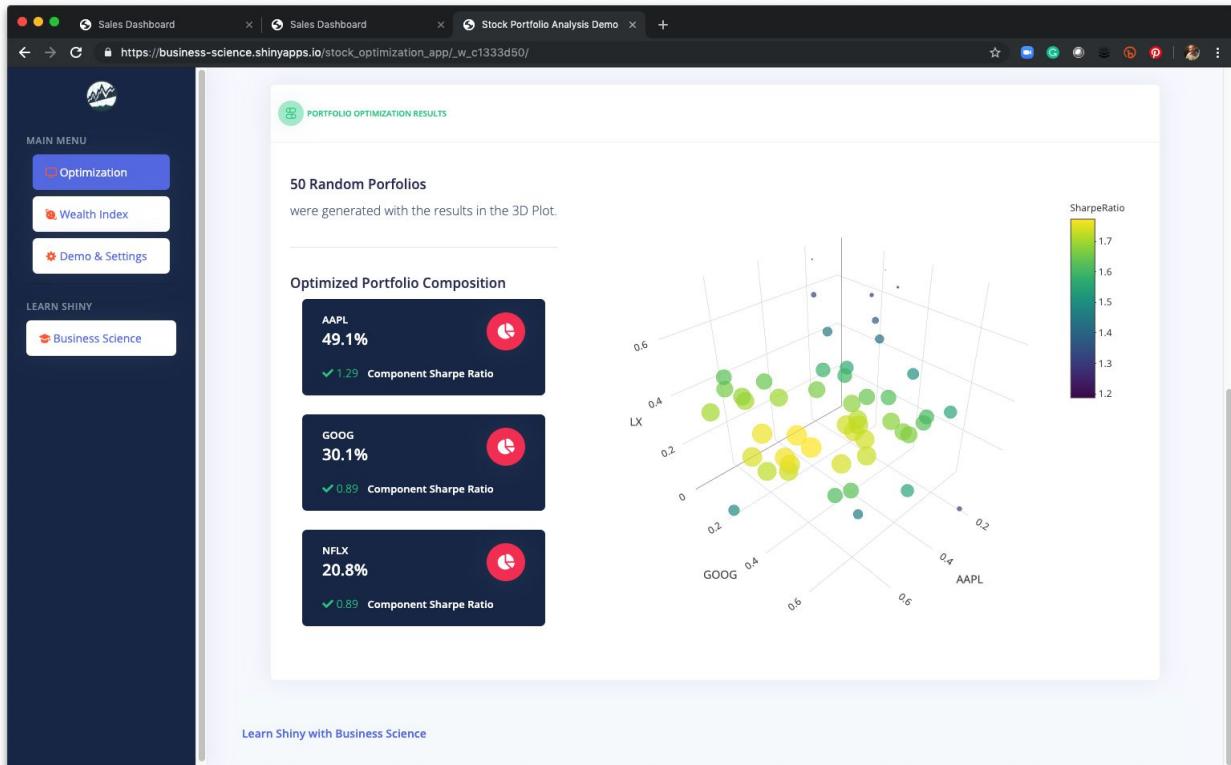


Skill Level: **Expert**

Build Time: **2 Days**

Technologies

- Shiny
- Argon
- Plotly
- Tidyquant



Optimize Financial Portfolios
ROI \$20M/yr

Demo: https://business-science.shinyapps.io/stock_optimization_app

App Build Process

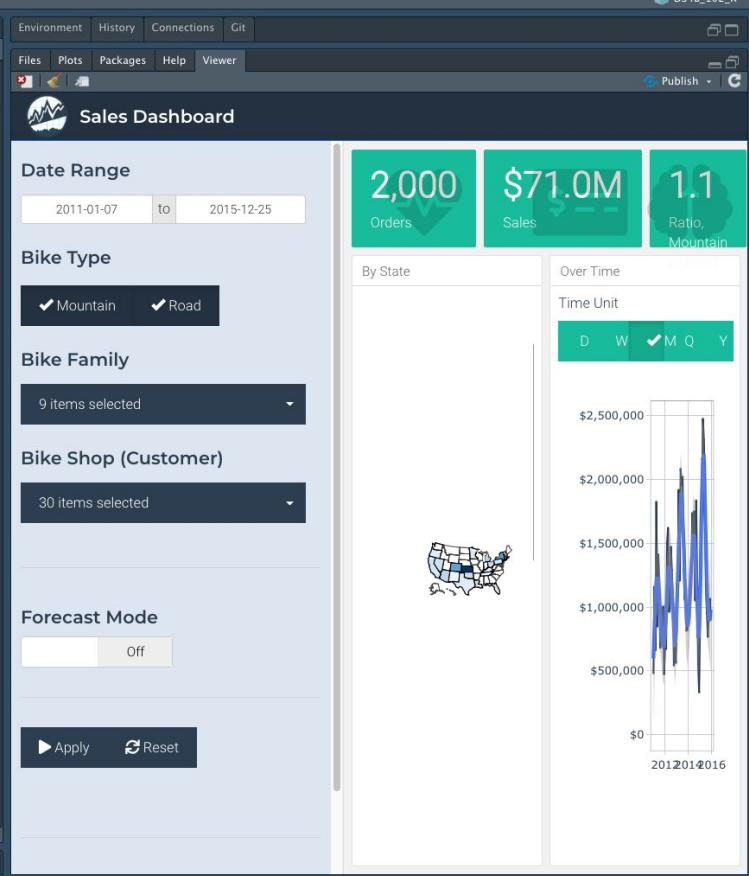
What does it look like?

Start with RStudio IDE

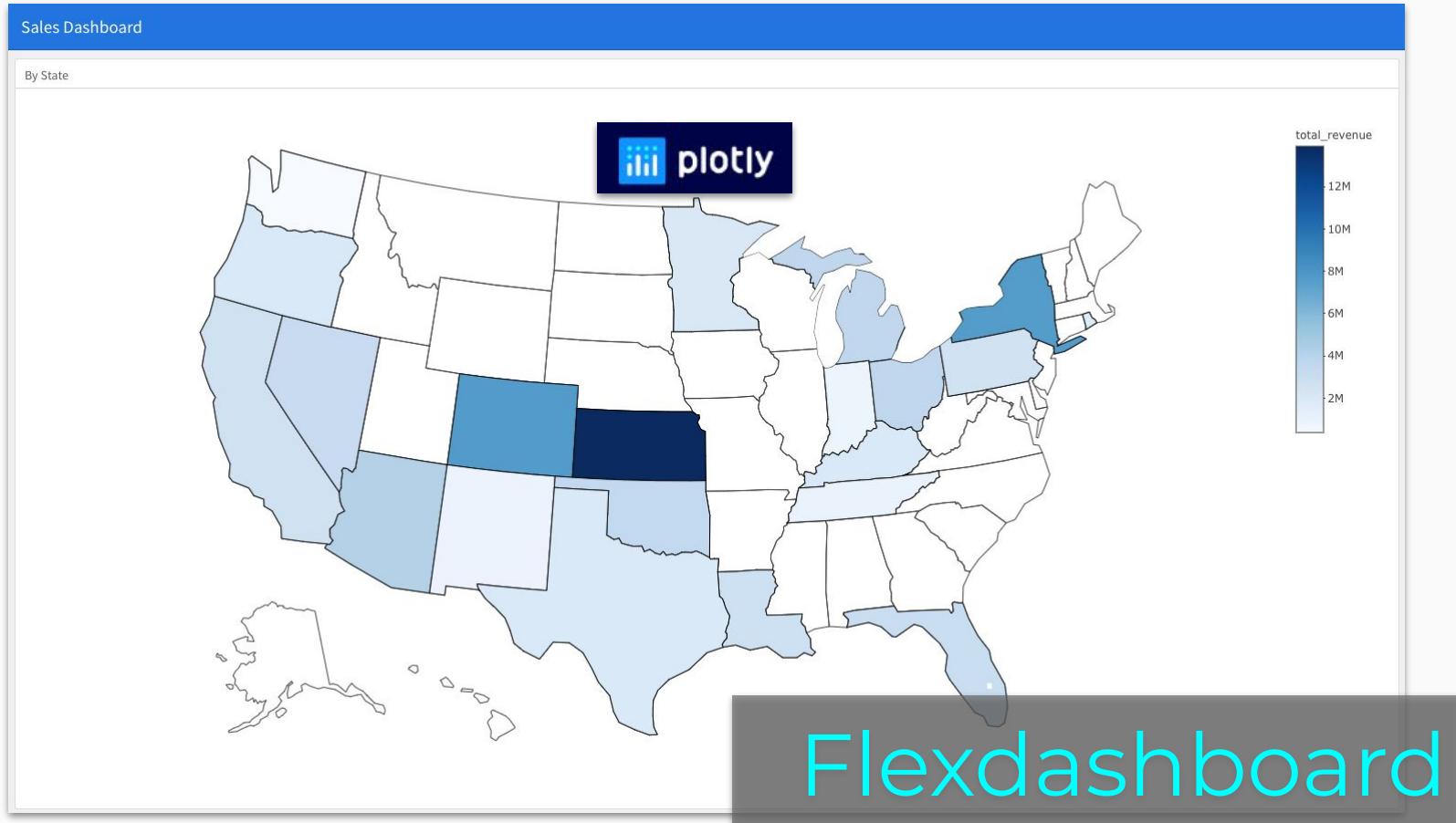


Rmarkdown

Setup to run Shiny + Flexdashboard

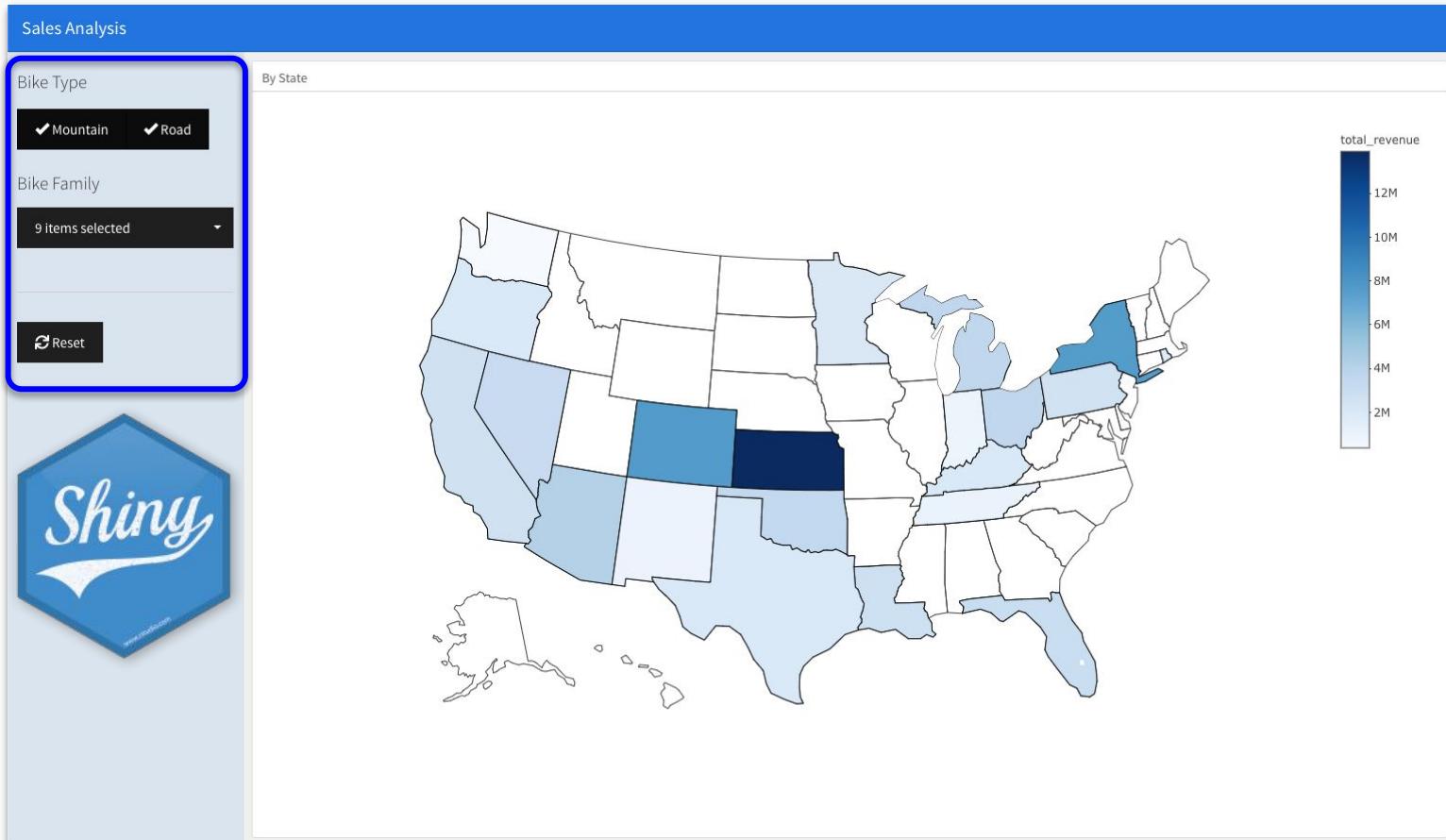


Create Layout & Geographic Data





Add Sidebar & Shiny Inputs



Add Time Series & Shiny UI



Sales Analysis

Date Range

2011-01-07 to 2015-12-25

Bike Type

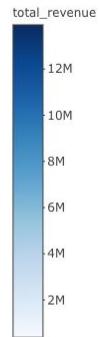
✓ Mountain ✓ Road

Bike Family

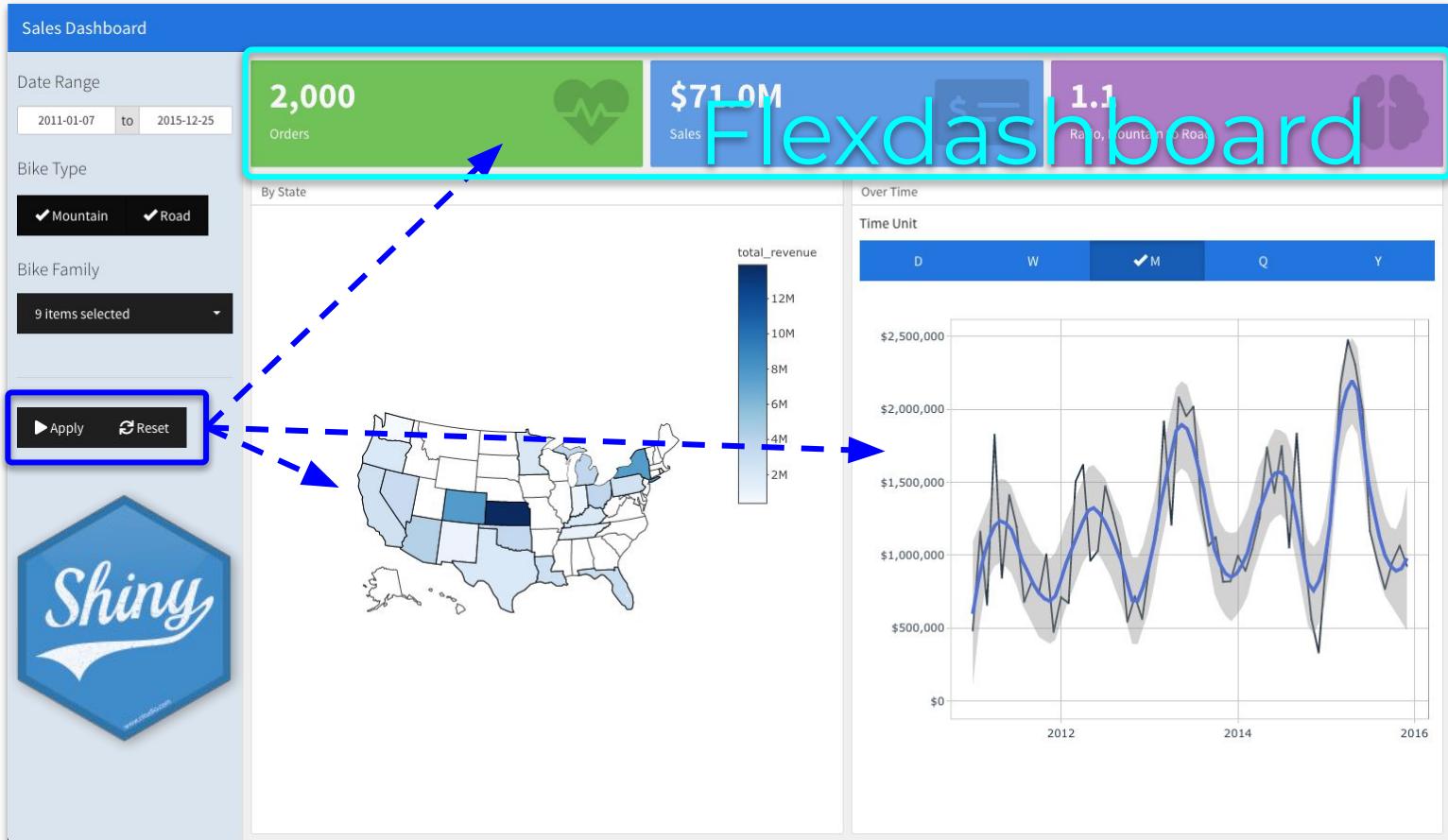
9 items selected

Reset

By State



Add Insights & Reactive Logic



Customize - Light



Sales Dashboard

Date Range

2011-01-07 to 2015-12-25

Bike Type

✓ Mountain ✓ Road

Bike Family

9 items selected

Bike Shop (Customer)

30 items selected

▶ Apply ⏪ Reset

2,000 Orders

\$71.0M Sales

1.1 Ratio, Mountain to Road

By State

total_revenue

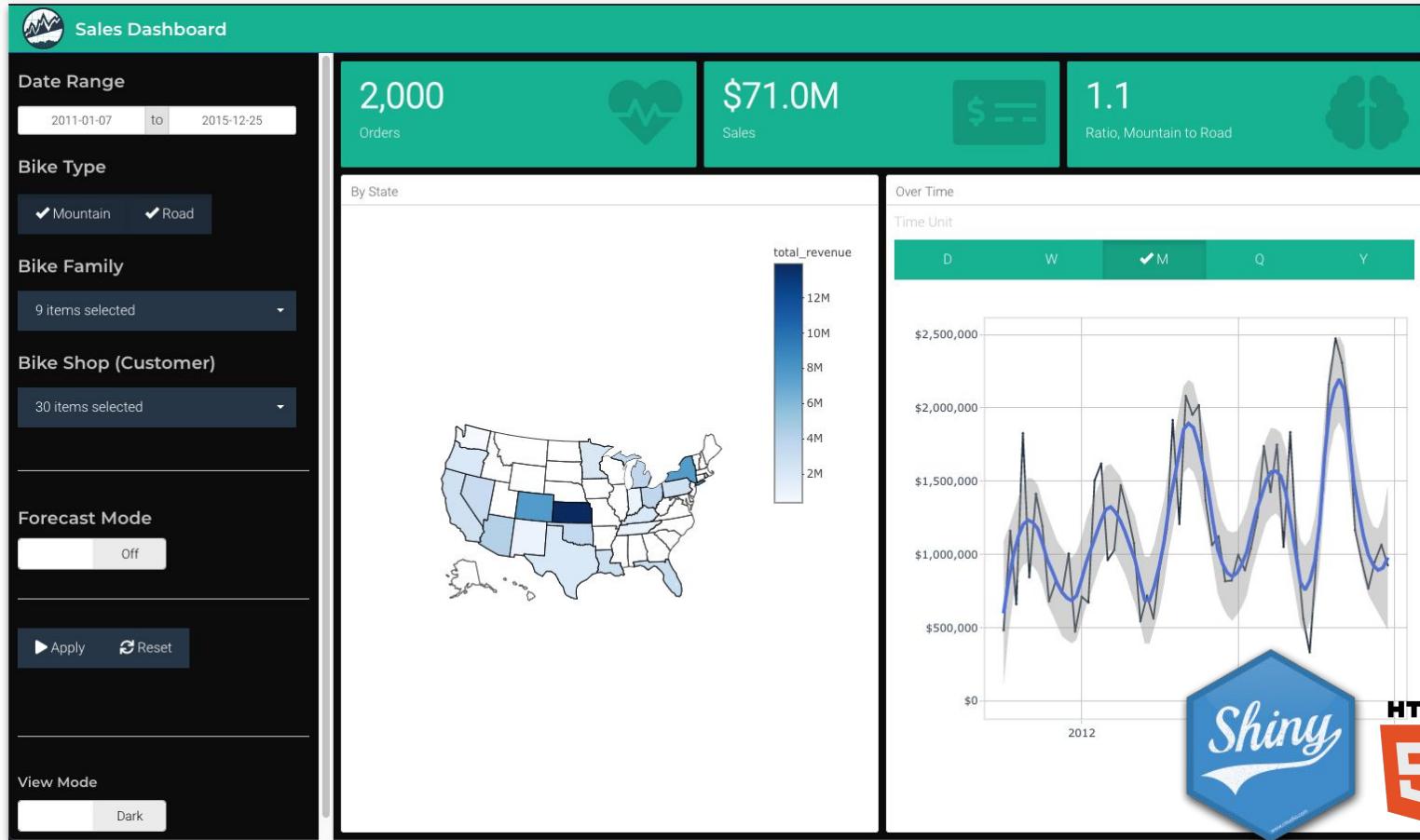
\$2,500,000
\$2,000,000
\$1,500,000
\$1,000,000
\$500,000
\$0

Over Time

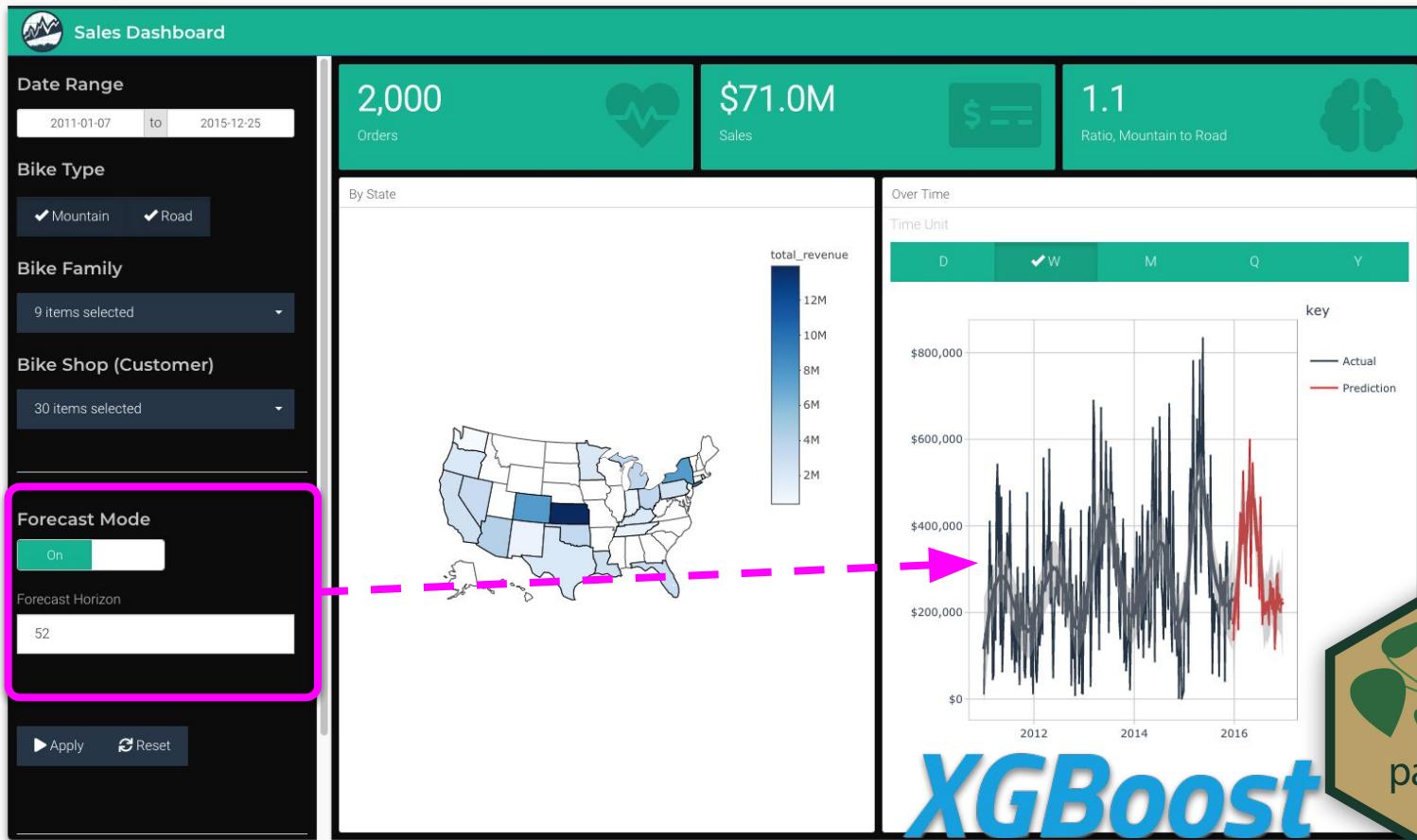
Time Unit

D W M Q Y

Customize - Dark



Integrate Machine Learning



NEW COURSE

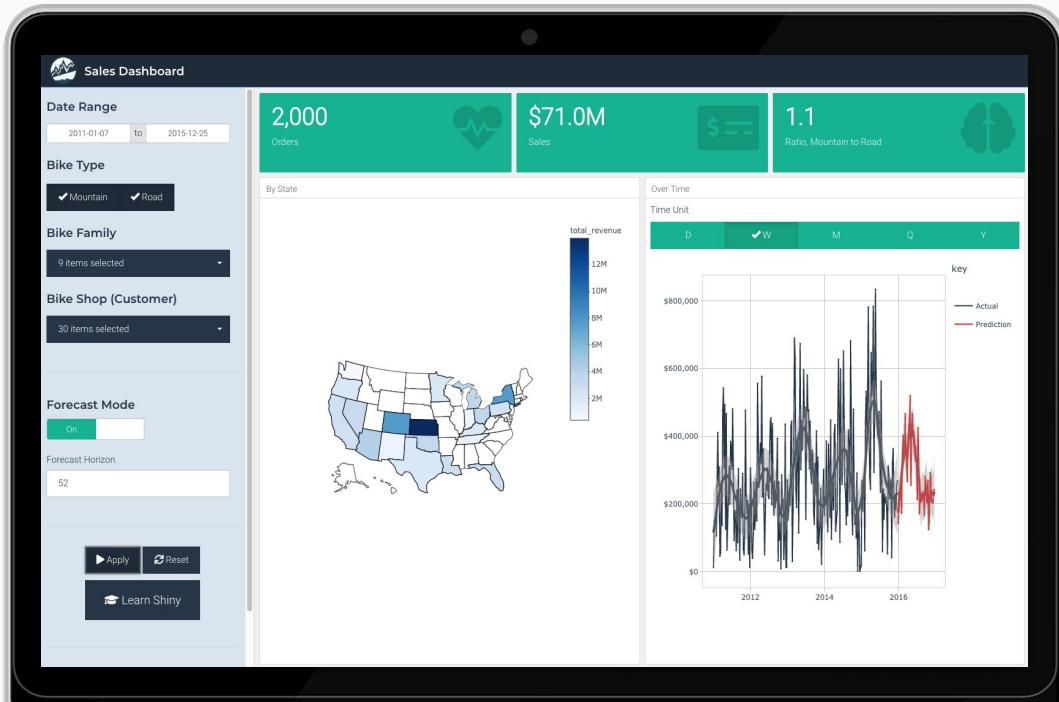


The thumbnail features a collage of data visualization elements including a large blue 'R' icon, a Shiny logo, a bar chart, and a scatter plot. Below the collage, the course title 'DS4B 102-R: Predictive Web Applications For Business With R' is displayed in bold black text. A brief description follows: 'Build a predictive web application using Shiny, Flexdashboard, and XGBoost.' At the bottom, there is a small profile picture of Matt Dancho and his name.

DS4B 102-R: Predictive Web Applications For Business With R

Build a predictive web application using Shiny, Flexdashboard, and XGBoost.

Matt Dancho

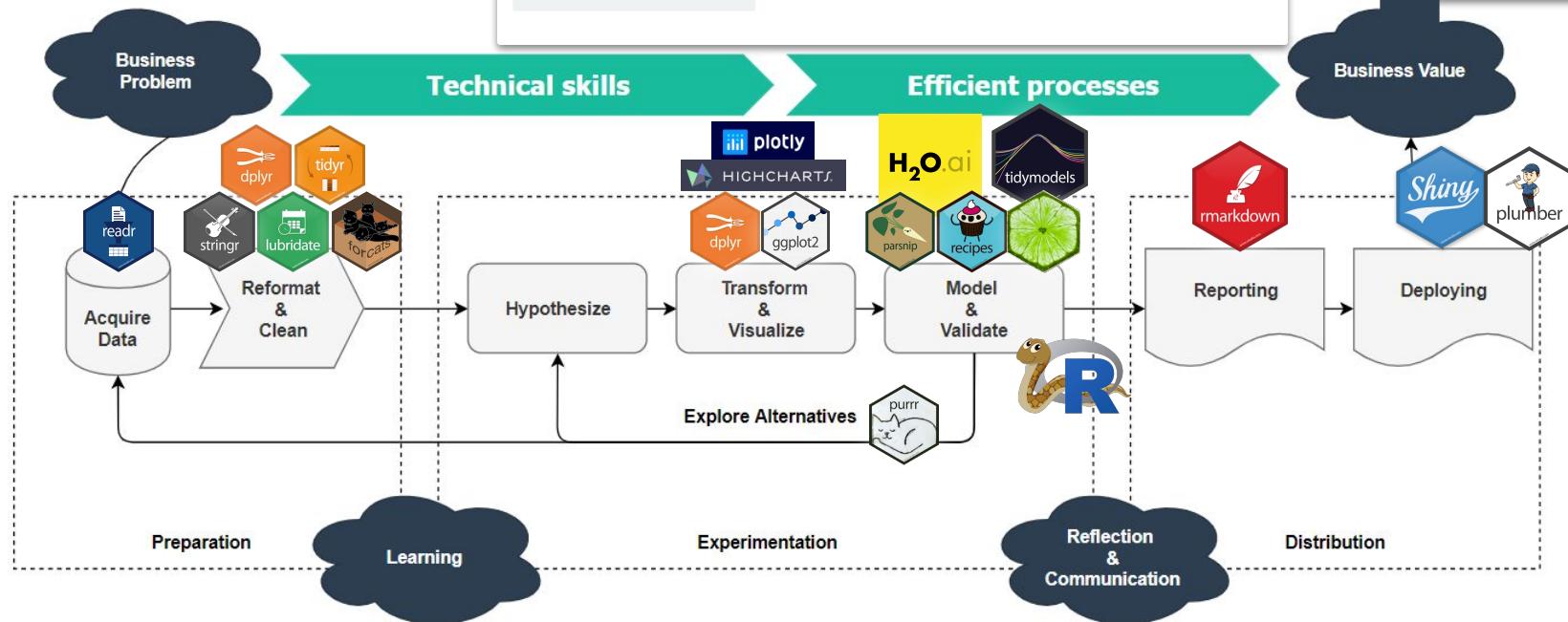
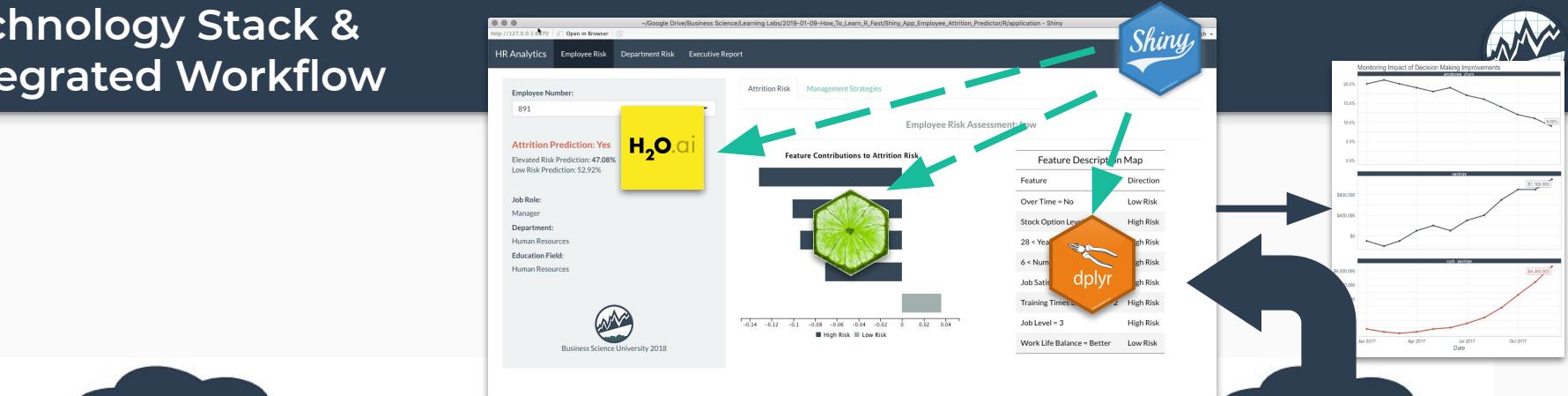


university.business-science.io

80/20 Tools

High-Impact Software

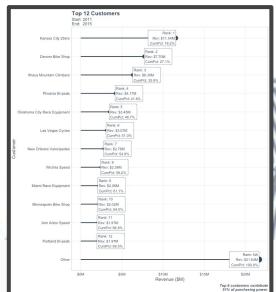
Technology Stack & Integrated Workflow



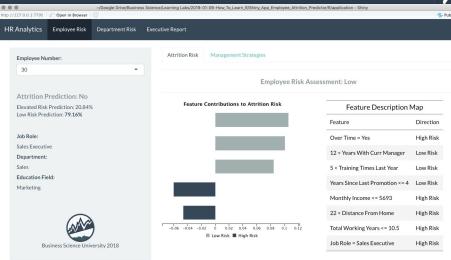
Learning Data Science is a Hill Climb

The Goal →

Advanced
Data Science



Visualization



Functional
Programming &
Modeling



Data Cleaning
& Manipulation

Courses

Learning Plan

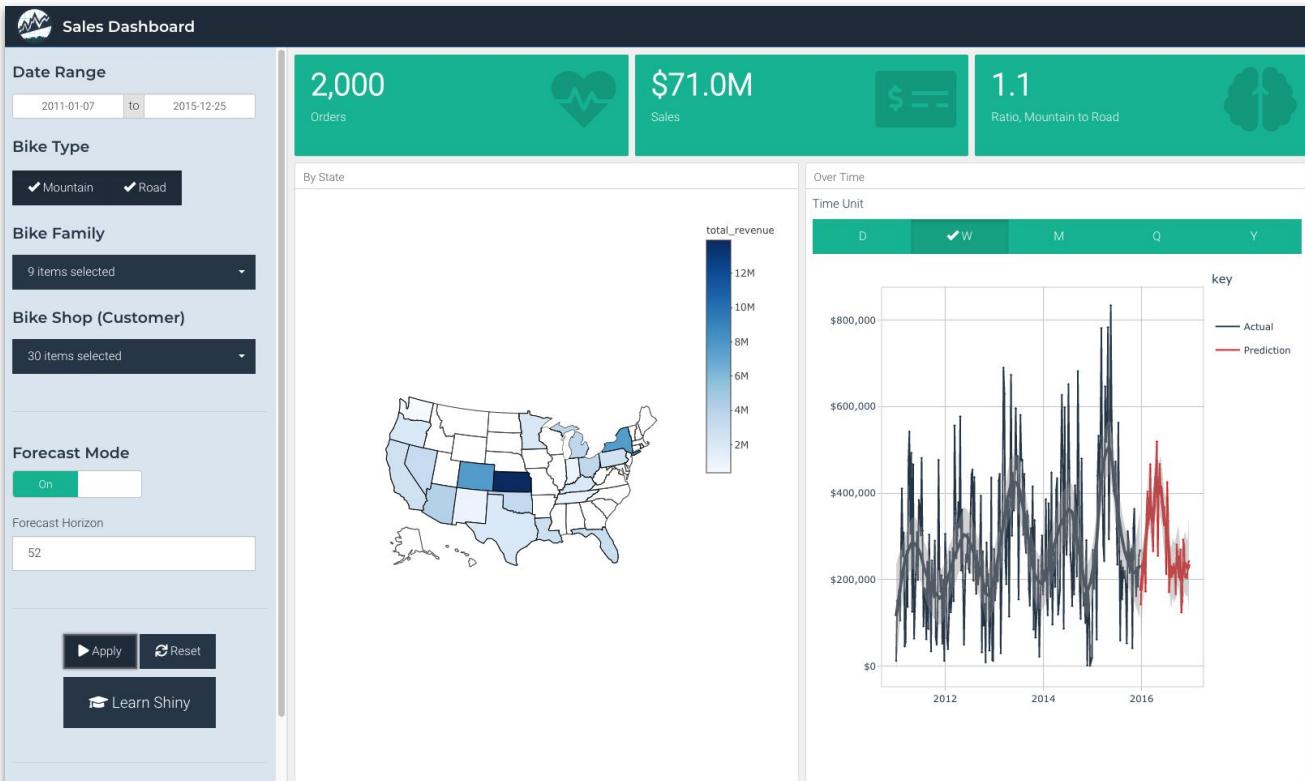
Become Marketable



2 Most Marketable Skills

Machine Learning

Web Applications



Course Roadmap



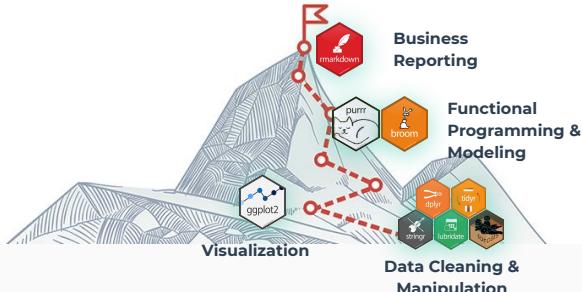
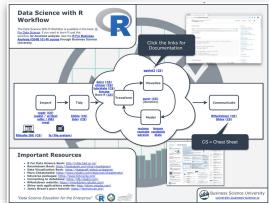
Business Analysis with R (DS4B 101-R)

Data Science For Business with R (DS4B 201-R)

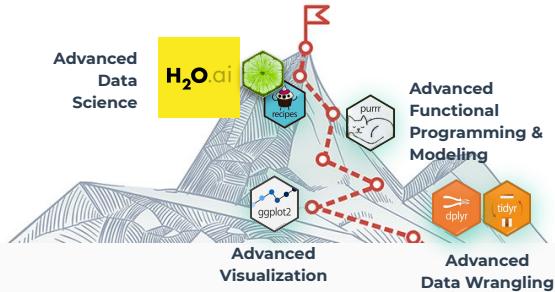
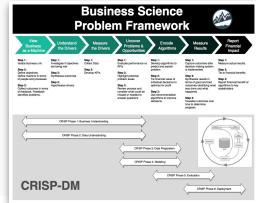
R Shiny Web Apps For Business (DS4B 102-R)

Project-Based Courses with Business Application

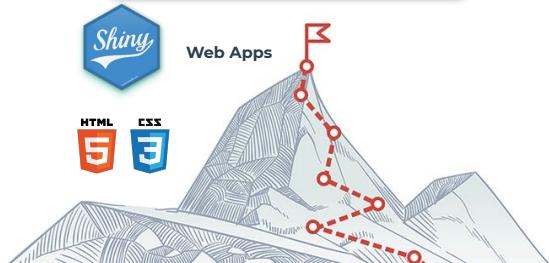
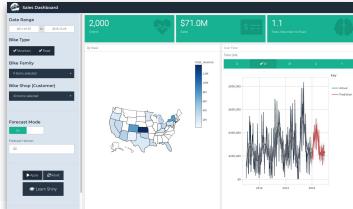
Data Science Foundations
7 Weeks



Machine Learning & Business Consulting
10 Weeks



Web Application Development
4 Weeks

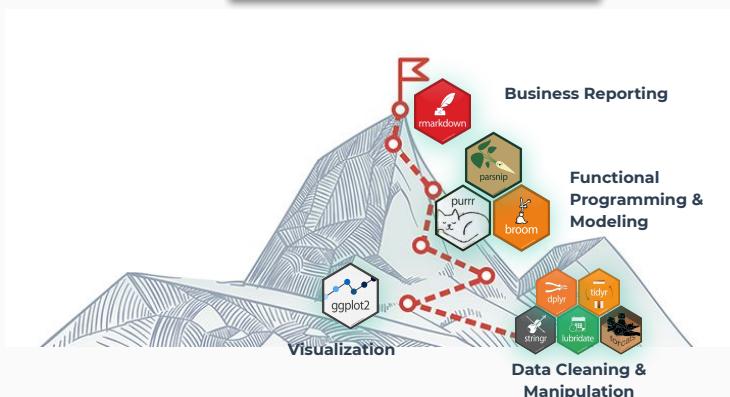
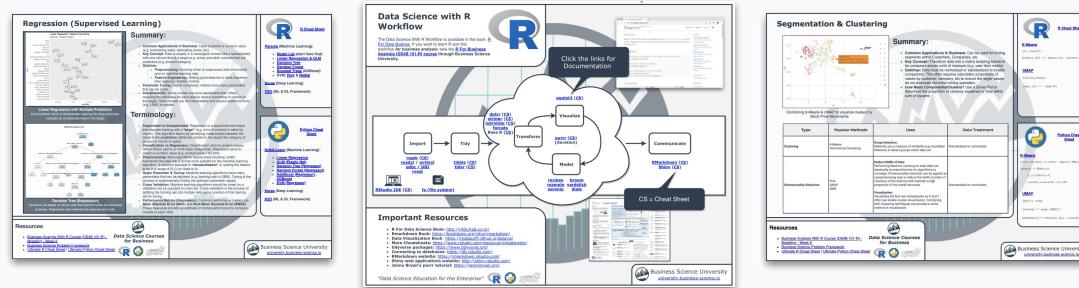


Key Benefits

- Fundamentals - Weeks 1-5 (25 hours of Video Lessons)
 - Data Manipulation (dplyr)
 - Time series (lubridate)
 - Text (stringr)
 - Categorical (forcats)
 - Visualization (ggplot2)
 - Programming & Iteration (purrr)
 - 3 Challenges
- **Machine Learning - Week 6 (8 hours of Video Lessons)**
 - Clustering (3 hours)
 - Regression (5 hours)
 - 2 Challenges
- Learn Business Reporting - Week 7
 - RMarkdown & plotly
 - 2 Project Reports:
 1. Product Pricing Algo
 2. Customer Segmentation

Business Analysis with R (DS4B 101-R)

Data Science Foundations
7 Weeks



Key Benefits

Solve End-to-End Churn Project

Understanding the Problem &
Preparing Data - Weeks 1-4

- Project Setup & Framework
- Business Understanding / Sizing Problem
- Tidy Evaluation - rlang
- EDA - Exploring Data -GGally, skimr
- Data Preparation - recipes
- Correlation Analysis
- 3 Challenges

Machine Learning - Weeks 5, 6, 7

- H2O AutoML - Modeling Churn
- ML Performance
- LIME Feature Explanation

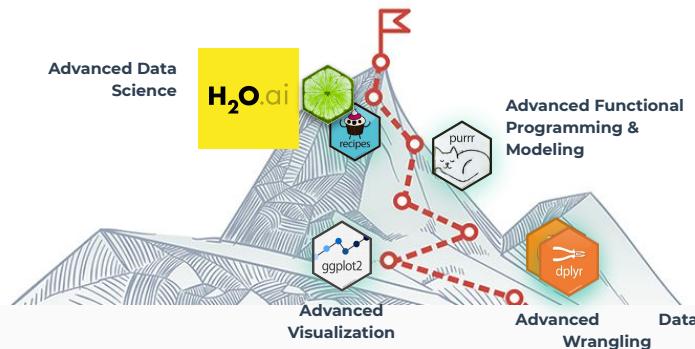
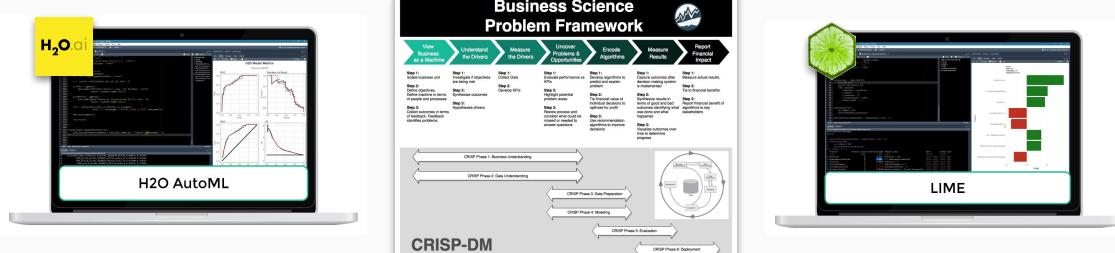
Return-On-Investment - Weeks 7, 8, 9

- Expected Value Framework
- Threshold Optimization
- Sensitivity Analysis
- Recommendation Algorithm

Data Science For Business

(DS4B 201-R)

Machine Learning & Business Consulting
10 Weeks



Key Benefits

Learn Shiny & Flexdashboard

- Build Applications
- Learn Reactive Programming
- Integrate Machine Learning

App #1: Predictive Pricing App

- Model Product Portfolio
- XGBoost Pricing Prediction
- Generate new products instantly

App #2: Sales Dashboard with Demand Forecasting

- Model Demand History
- Segment Forecasts by Product & Customer
- XGBoost Time Series Forecast
- Generate new forecasts instantly

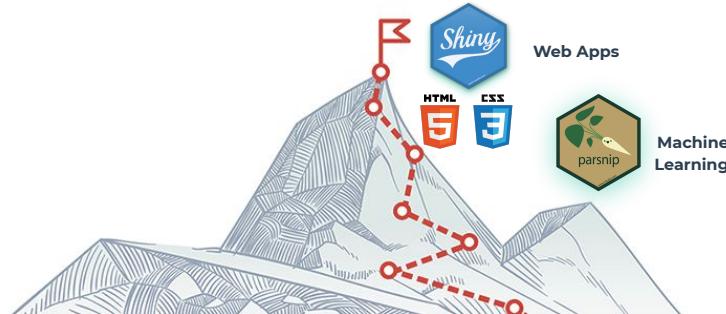
Shiny Apps for Business (DS4B 102-R)



Web Application Development
4 Weeks

The collage includes:

- A screenshot of a "Data Science with R" dashboard showing a map of the US with state-level data, a bar chart for "2,000", a line chart for "\$71.0M", and a scatter plot for "1.1".
- A flowchart titled "Data Science with R Web Applications & the 'Shinyverse'" showing the process from "Start" through "Components", "Advanced Frontend", "Testing", and "Publish". It highlights "Shiny" and "Flexdashboard" as key components.
- A screenshot of a "Sales Dashboard" showing various charts and data tables for sales performance.
- A screenshot of a "Demand Forecasting" app showing time series plots and forecast results.





Testimonials



*“Your program allowed me to cut down to **50% of the time** to deliver solutions to my clients.”*

-Rodrigo Prado, Managing Partner Big Data Analytics & Strategy at Genesis Partners



*“I can already **apply** a lot of the early gains from the course to current working projects.”*

-Adam Mitchell, Data Analyst with Eurostar



*“My work became **10X easier**. I can spend quality time asking questions rather than wasting time trying to figure out syntax.”*

-Mohana Chittor, Data Scientist with Kabbage, Inc

Achieve
Results that
Matter to
the
Business

20% OFF PROMO Code: shinyappslaunch



R-TRACK BUNDLE

DS4B 101-R: Data Science For Business With R

DS4B 102-R: Shiny Web Applications For Business (Level 1)

DS4B 201-R: Business Analysis With R

Bundle - DS For Business + Web Apps (Level 1): R-Track - Courses 101, 102,

3 Course Bundle

0% COMPLETE

DS4B 101-R: Data Science For Business With R

DS4B 102-R: Shiny Web Applications For Business (Level 1)

DS4B 201-R: Business Analysis With R

R-TRACK BUNDLE

MSRP: \$1297

Your Price! \$919

Save: \$378

20% OFF PROMO Code: shinyappslaunch



Bundle - DS For Business + Web Apps (Level 1): R-Track - Courses 101, 102,

3 Course Bundle **0%** COMPLETE

Payment Plans

<input checked="" type="radio"/>	Paid Course 20% COUPON DISCOUNT	\$1,149 \$919.20	Enroll
<input type="radio"/>	3 Monthly Payments 20% COUPON DISCOUNT 3X Monthly	3 payments of \$449/m	3 payments of \$359.20/m
<input type="radio"/>	6 Low Monthly Payments 20% COUPON DISCOUNT 6X Monthly	6 payments of \$239/m	6 payments of \$191.20/m

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Begin Learning Today

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