Georgia Data
Innovation Hub
Carl Vinson Institute of Government
UNIVERSITY OF GEORGIA

The Great Data Visualization "Bake-off"

No "Loaf"ing Around with Data

Session Description

1. Adapted from “The Great British Bake Off” but participants are baking data visualizations instead of cakes.

2. Participants were given the same ingredients (i.e., data) in advance to prepare a suite of statistical and visual analytics. Each will have 15 minutes to present their analyses followed by a series of follow-up questions from the moderator.

3. The audience will serve as judges for the Most Stunning, Most Informative, Most Creative, and Best in Show awards.

Learning Objectives

1. Identify and understand how two stages in the data science pipeline, cleaning and visualizing data, are achieved using well-known business intelligence (BI) platforms and data science tools.

2. Compare and contrast the approaches that data scientists use to construct and communicate statistical and visual analytics.

3. Recognize how data scientists apply data science concepts and methods to solve problems in real-world contexts.

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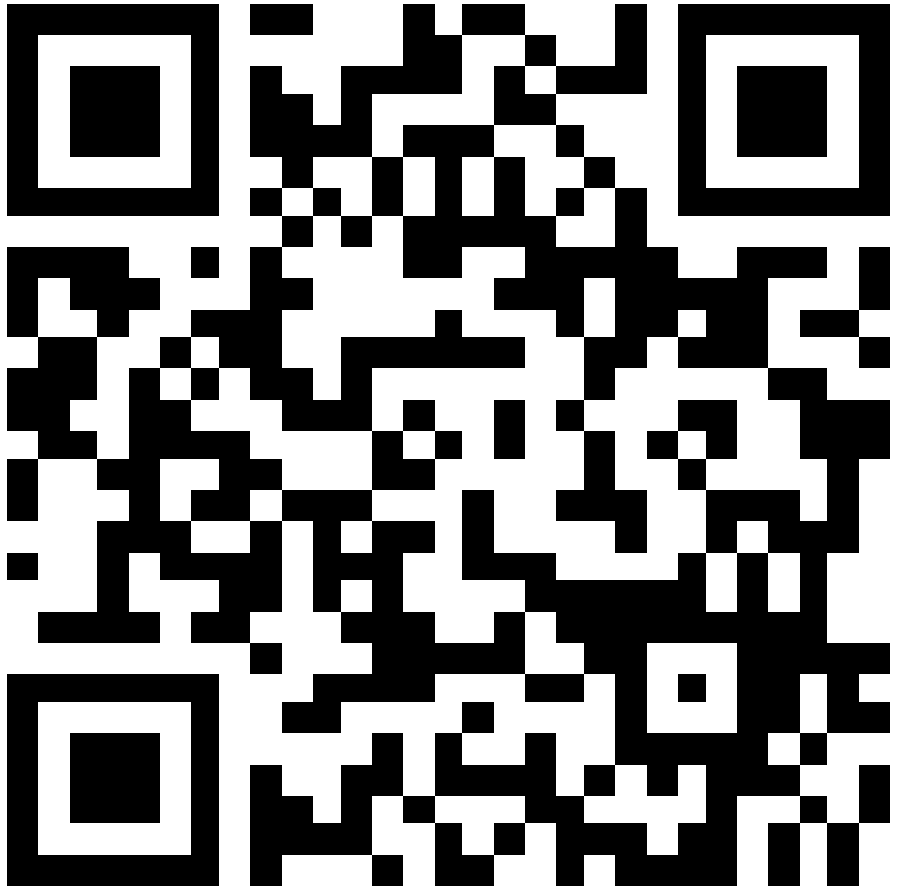

What is business intelligence?

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Business intelligence (BI) refers to technology, knowledge/skills, and experience which help organizations understand their data better in order to make data-informed decisions. BI capabilities allow users to:

- Collect and manage data from diverse sources.
- Present data in understandable formats such as tables and graphs.
- Deliver data and analysis in a timely, reliable, and useful process to end-users such as data analysts and decision makers.

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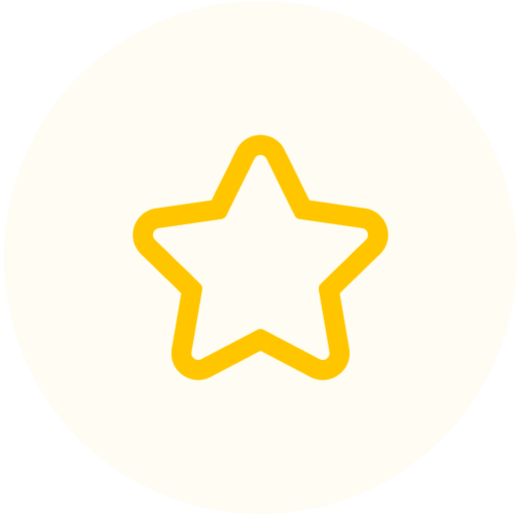

How are you feeling NOW about building and using business intelligence tools?

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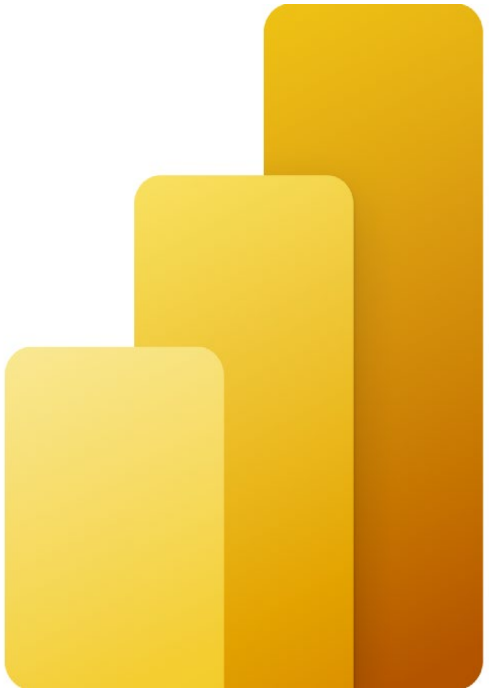
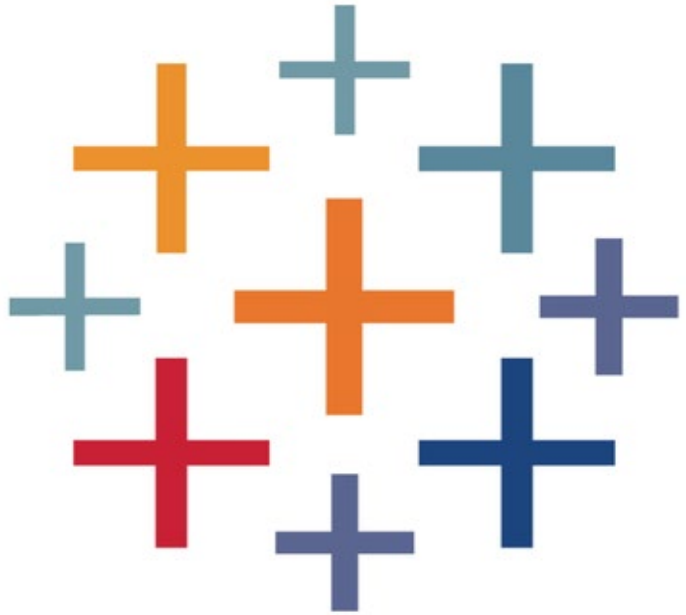
Bake-Off

Bake-Off Appliances



Microsoft's PowerBI

Qlik's Qlik Sense



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Which business intelligence platform do you have experience with already?

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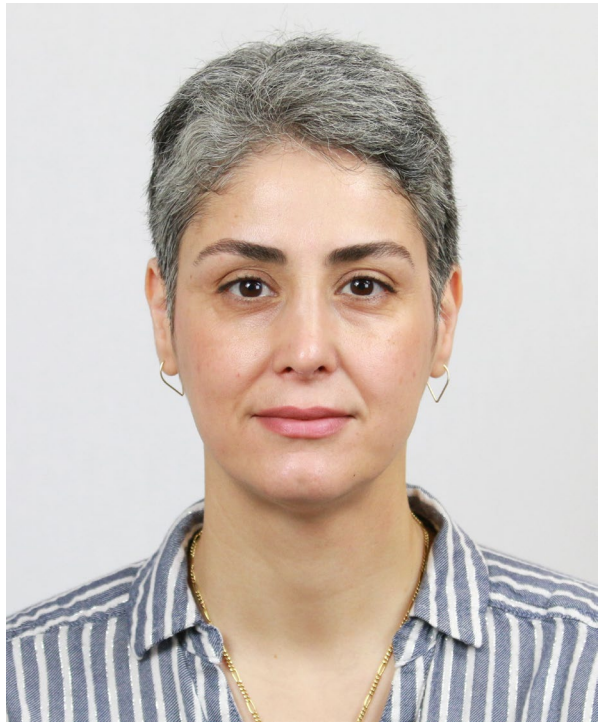
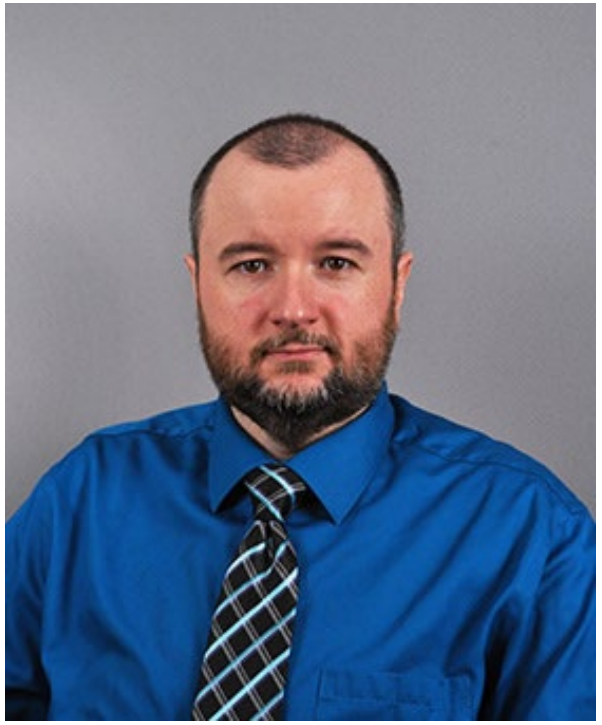
Bake-Off Chefs



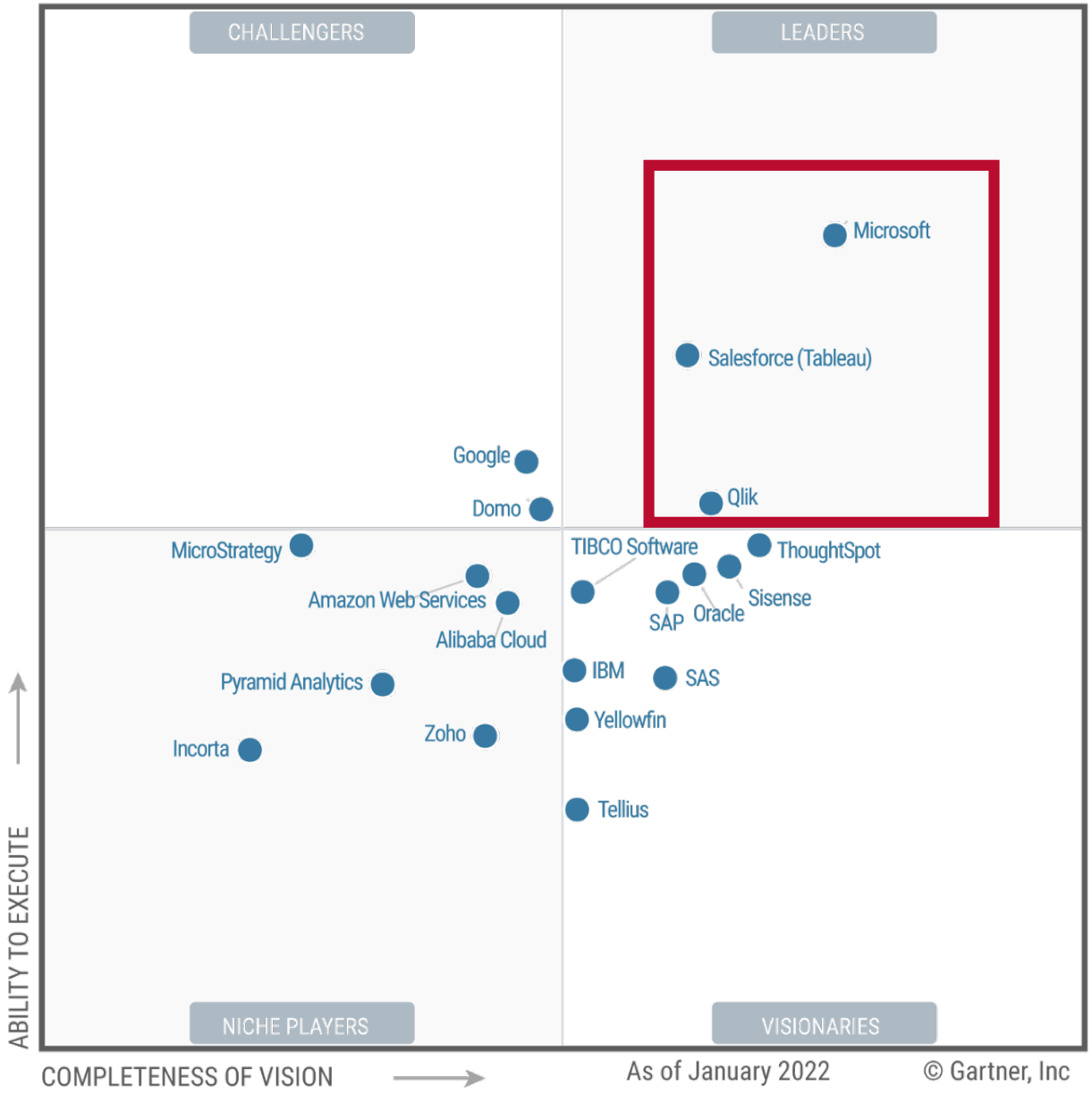
PowerBI
Sahar Voghoei, PhD



Qlik Sense
Scott King

Tableau
Emily Franklin

Figure 1: Magic Quadrant for Analytics and Business Intelligence Platforms



Source: Gartner (March 2022)

The Main Ingredient

1. Data comes from the **Bureau of Economic Analysis (BEA)**, a federal agency within the Department of Commerce, who collects, analyzes, and reports some of the nation's most closely watched economic indicators.

2. Today's dashboards include analyses on **entrepreneurs** (non-farm proprietors) who are defined as sole proprietorships, partnerships, or other private non-farm businesses not classified as corporations.

3. Analyses will consider economic and entrepreneurship variables by total counts or per capita. **Per capita** is per unit of population.

The Main Ingredient

3. Additionally, dashboards will explore **gross domestic product (GDP)** which is the market value of goods and services produced and sold.

4. These dashboards analyze data for GDP for all **159 Georgia counties**. Data scientists may choose to aggregate data by one of Georgia's **12 regional commissions**. Regional commissions were established by the Georgia Planning Act charged with assisting local governments with planning on a regional basis.

5. Data is collected from **2001 – 2021**.

Data-Informed Decision Making

To promote data-informed decision making about economic planning at a state and regional level, our analysts will demonstrate how their dashboards address the following policy questions:

1. How has entrepreneurial breadth, the percentage of entrepreneurs out of total employment, changed in Georgia over the past 20 years?
2. How has entrepreneurial and economic outcomes changed geographically and over time?
3. What's the relationship between population changes and those same entrepreneurial and economic outcomes?

Confessions From Our Data Chefs

Our data scientists will share their process in building their statistical and visual analytics. In particular, our data scientists should highlight and discuss the following themes:

1. Ease of data management and cleaning within the platform
2. Ease of exploratory data analysis within the platform
3. Availability of documentation and training resources
4. Diversity of available visualizations

Dashboard Demonstrations

Dashboard Demonstrations

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Dashboard Demonstrations

PowerBI

Dashboard Demonstrations

Qlik Sense

Lightning Round

Awards

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What dashboard should receive the Most Stunning Award?

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What dashboard should receive the Most Creative Award?

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What dashboard should receive the Most Informative Award?

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What dashboard should receive the Best in Show Award?

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Wrap-Up

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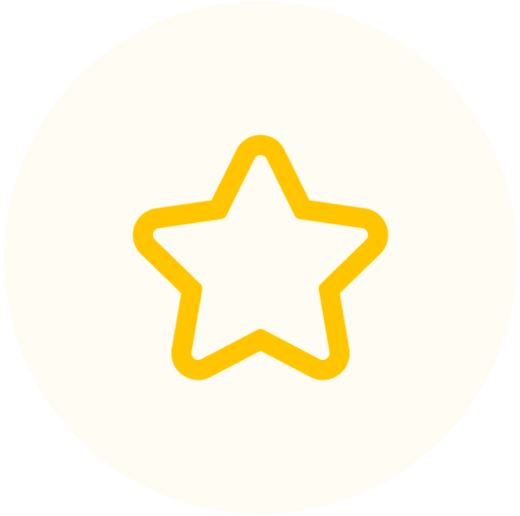

How are you feeling NOW about building and using BI tools after this bake-off?

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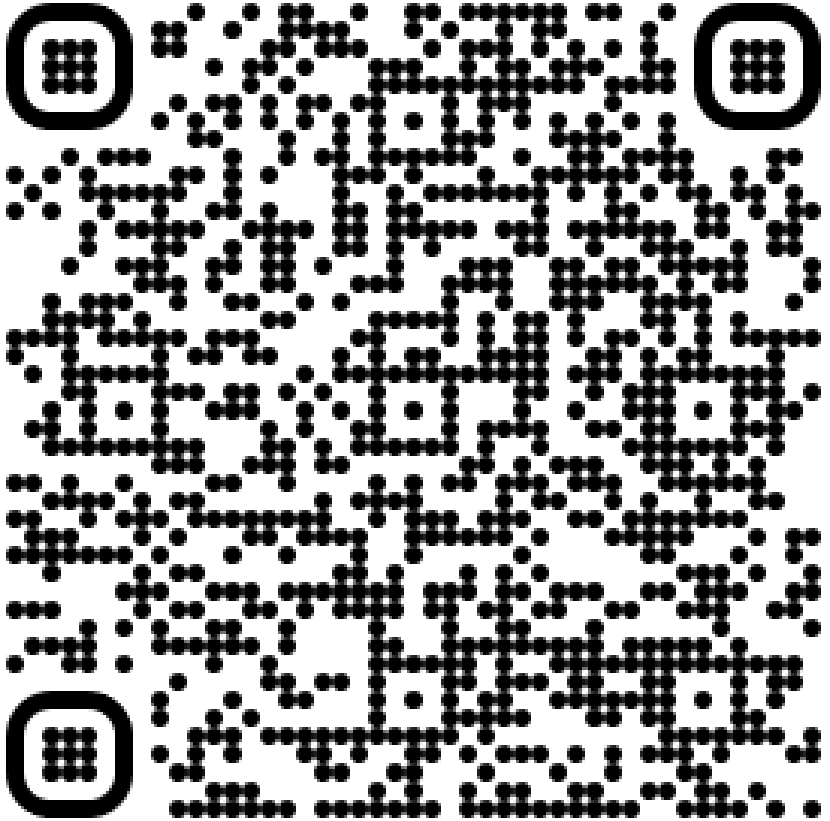
We do these things not because they are easy, but because we thought they were going to be easy.

The Programmer's Credo

To Learn More…

1. Data Science
2. Data & Statistical Modeling
3. Static & Dynamic Visualizations
4. Predictive Analytics
5. Machine Learning
6. Casual Modeling



Conference Wrap-Up

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What was most helpful or interesting to you?

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What should we do different for next year's conference?

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What learning will you be taking back to your organization to implement?

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Who or what would you like to hear at next year's conference?

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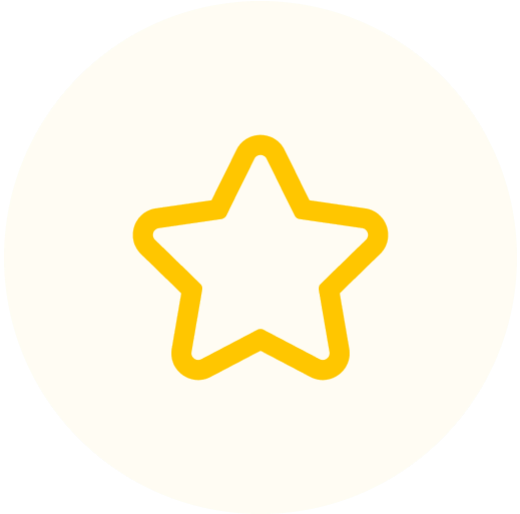

How would you rate your satisfaction of this conference (1 - Poor, 2 - Fair, 3 - Good, 4 - Excellent)?

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