

A person wearing a long orange coat and dark pants stands in profile on a rocky, gravelly shore. They are looking out over a dark body of water towards a horizon where a bright, low sun is setting, creating a horizontal band of orange and yellow light across the sky. The sky transitions from a deep orange near the horizon to a dark teal at the top. The rocks are dark and jagged, and the ground is covered in small stones and pebbles.

# AUTOMATED INSIGHT

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TDI CAPSTONE PROJECT

HAYDAR EVREN

# Target Audience

Who needs this service the most?





# Problem Definition

Why do they need this service?

Small-sized businesses face different **challenges** during future business decision stages that vary upon their roles and expertise but can be generalized into 3 areas.



## Resource Constraints

- Hiring a data analyst or scientist might not always be cost effective.



## Scalability

- Excel doesn't scale, and the forecasts stop as soon as the employee leaves.



## Actionable Insight

- To become more profitable, enterprise owners not only need deeper insights, but also near-real time insights that can enable course correction, and result in a better final outcome.

# Advanced Solution

## What can our service deliver?

### More business value

It mechanizes basic and tedious business and reporting activities, translating into saved time for data scientists.

### Saving enterprise costs

As employee time is more expensive when compared to purchasing computing resources, it saves a huge chunk of the enterprise budget.

### Faster analysis

A enterprise stakeholder can perform analytics faster if analysis requires little or no human input.

### Analysis of time-varying data

Any volume of data collected over a specific time period that is automatically analyzed makes it more accessible during retrieval and decision making.



### Making predictions

Automatically working with varied analog categories and labels of data reduces the time taken for predictive analysis.

### Faster decision-making

Automated data analytics can contribute to faster decision-making in enterprises.

### Complex business insights

It can be instrumental in providing business insights that would otherwise be unavailable by manual human analysis.

# Key Elements

How does the service work?

## Data Sets



Request uploading datasets and selecting identifier and time variables.

## Target



Request selecting the subjects and variables of interest and prediction interval.

## Data Imputation



Apply imputation techniques to generate a combined dataset that all missing entries are interpolated.

## Insight



Generate data insights related to subjects and variables of interest.

## Deep Learning



Apply statistical and deep learning models to generate predictions for subjects and variables of interest.

# Time to demo!

- Example: GDP forecast example to demonstrate how automated data analysis can be done and what values it will bring to the users.
- Dataset: 2019 dataset from across 13 publicly available sources. (15312 observations, 3451 variables, 403.2MB memory usage, 196 countries observed for 58 years)
- Link to demo: <https://automated-insight-capstone.herokuapp.com/>