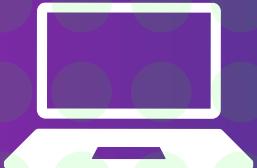
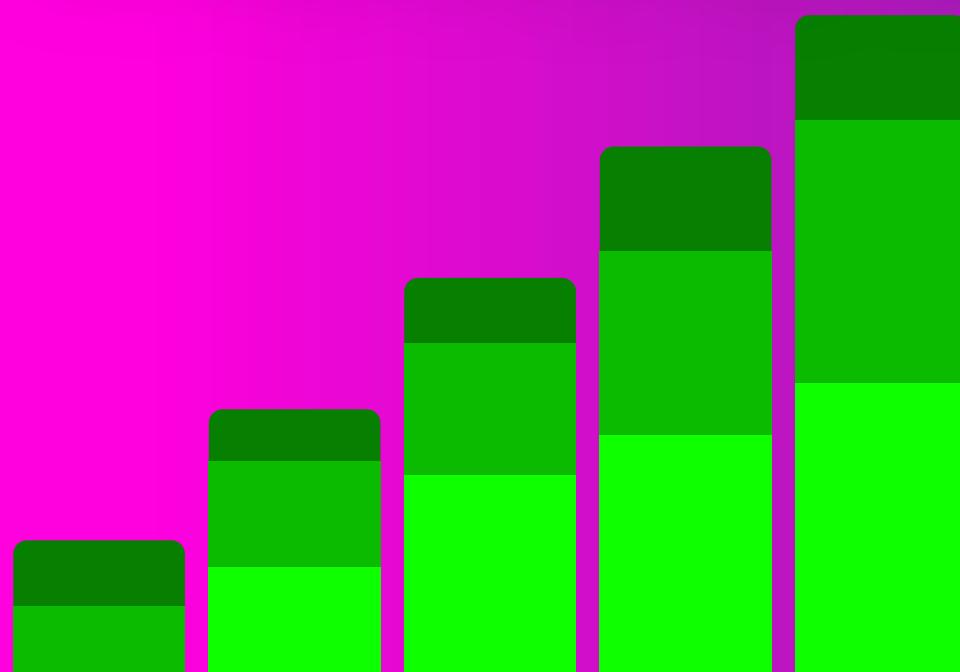




# TOP 50

# DATA ANALYST PORTFOLIO PROJECTS



ANDREW MADSON

# Excel

## PROJECT

Marketing ROI  
Analysis

## SKILLS

Pivot tables,  
formulas

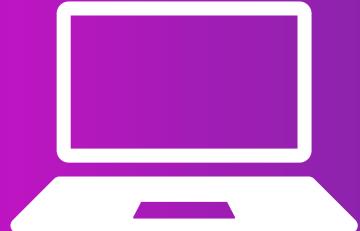
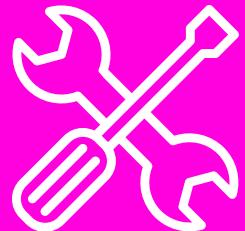
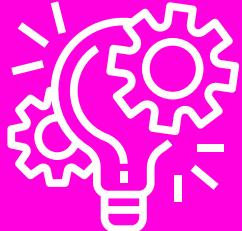
## RESOURCES

"Excel Dashboards and Reports for Dummies" by Alexander, M.,

Chandoo Excel Tutorials

## GETTING STARTED

Analyze marketing spend data to calculate ROI. Use pivot tables to summarize data and formulas to calculate ROI.



# Excel

## PROJECT

Supply Chain Optimization

## SKILLS

Solver, data validation

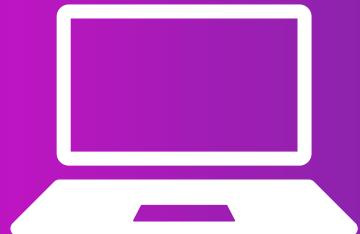
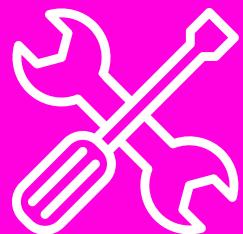
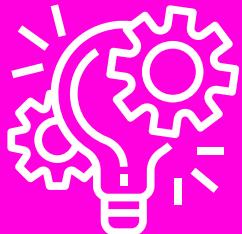
## RESOURCES

"Excel Data Analysis For Dummies" by Nelson, S.,

Excel Easy Tutorials

## GETTING STARTED

Develop a model to optimize supply chain operations. Use Solver to find the optimal solution and data validation to ensure data integrity.



# Excel

## PROJECT

HR Analytics -  
Employee Attrition

## SKILLS

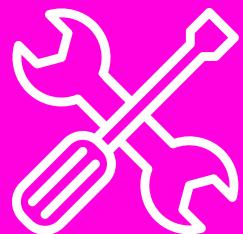
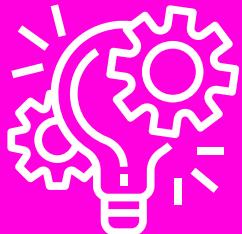
Pivot tables,  
conditional  
formatting

## RESOURCES

"Excel Formulas & Functions For Dummies"  
by Bluttman, K.,

## GETTING STARTED

Analyze employee data to understand attrition rates. Use pivot tables to group data and conditional formatting to highlight key findings.



# Excel

## PROJECT

Product Pricing  
Strategy

## SKILLS

What-if Analysis,  
Data Tables

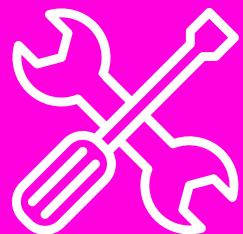
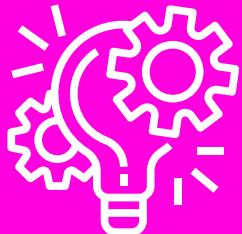
## RESOURCES

"Excel 2019 Power Programming with VBA"  
by Walkenbach, J.,

MrExcel's Excel Tutorials

## GETTING STARTED

Analyze different pricing strategies and their impact on sales and profits. Use What-if Analysis and Data Tables to compare different scenarios.



# Excel

**PROJECT** Customer Lifetime Value Analysis

**SKILLS** Formulas, Pivot Tables

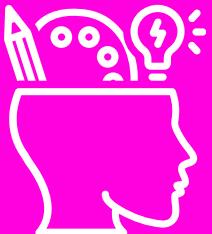
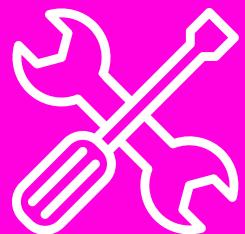
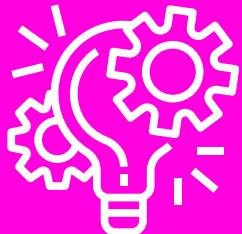
## RESOURCES

"Microsoft Excel 2019 Data Analysis and Business Modeling" by Winston, W.,

Excel Easy Tutorials

## GETTING STARTED

Analyze customer data to calculate Customer Lifetime Value. Use formulas to calculate CLTV and pivot tables to summarize data.



# Excel

## PROJECT

Sales Forecasting

## SKILLS

Pivot tables,  
forecasting functions

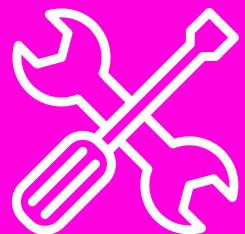
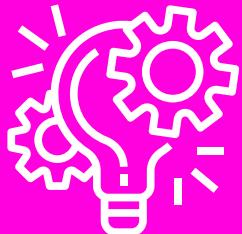
## RESOURCES

"Excel 2019 All-in-One For Dummies" by  
Harvey, G.,

Excel Jet Tutorials

## GETTING STARTED

Analyze historical sales data to forecast future sales. Use pivot tables to summarize data and Excel's built-in forecasting functions to predict trends.



# Excel

## PROJECT Employee Scheduling

### SKILLS

Conditional  
formatting,  
optimization

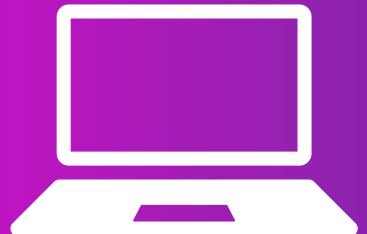
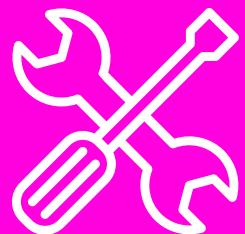
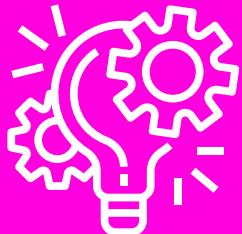
### RESOURCES

"Excel 2019 Bible" by Alexander, M.,

Contextures Excel Tips

### GETTING STARTED

Create an employee scheduling system.  
Use conditional formatting to highlight  
scheduling conflicts and Excel's Solver tool  
to optimize shifts.



# Excel

## PROJECT

Financial Budget  
Tracking

## SKILLS

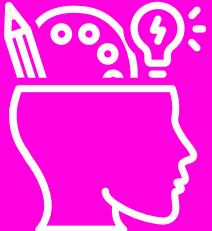
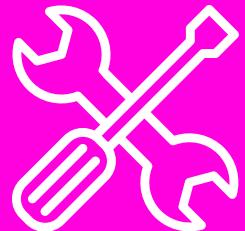
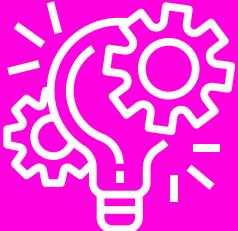
Data visualization,  
pivot tables,  
formulas

## RESOURCES

"Excel Formulas & Functions For Dummies"  
by Bluttman, K.,

## GETTING STARTED

Develop a system to track personal or business finances. Use formulas to calculate totals and pivot tables to summarize data.



# Excel

## PROJECT

Customer Segmentation

## SKILLS

Pivot tables,  
conditional  
formatting

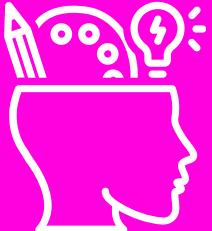
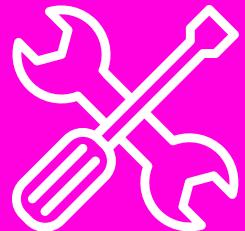
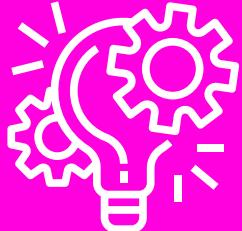
## RESOURCES

"Microsoft Excel 2019 Data Analysis and Business Modeling" by Winston, W.,

Excel Easy Tutorials

## GETTING STARTED

Analyze customer data to identify distinct customer segments. Use pivot tables to group data and conditional formatting to highlight key findings.



# Excel

## PROJECT

Inventory Management

## SKILLS

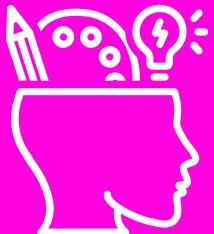
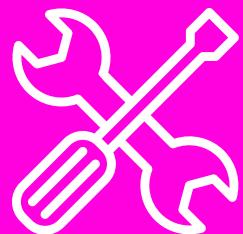
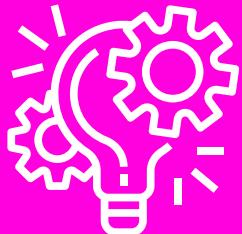
Conditional  
formatting, data  
validation, VLOOKUP

## RESOURCES

"Excel 2019: From Beginner to Advanced"  
by Pichler, B.,

## GETTING STARTED

Create an inventory management system.  
Use data validation to ensure data  
integrity, XLOOKUP to retrieve  
information, and conditional formatting to  
highlight low stock levels.



# SQL

## PROJECT

Customer Segmentation

## SKILLS

SQL querying, data manipulation

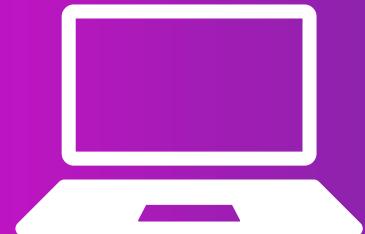
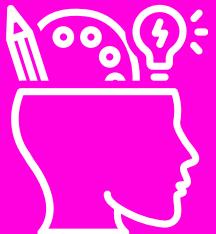
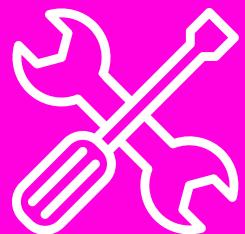
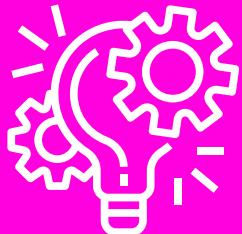
## RESOURCES

"SQL in 10 Minutes, Sams Teach Yourself"  
by Forta, B.,

W3Schools SQL Tutorial

## GETTING STARTED

Analyze customer data to identify distinct customer segments. Use SQL queries to group data based on different characteristics.



# SQL

## PROJECT

E-commerce  
Database Analysis

## SKILLS

SQL querying, joins,  
aggregation

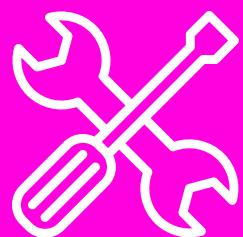
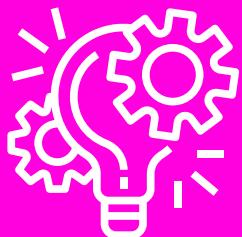
## RESOURCES

"Learning SQL" by Beaulieu, A.,

Khan Academy SQL Course

## GETTING STARTED

Analyze an e-commerce database to extract insights about sales, customer behavior, and product performance. Use joins to combine data and aggregation functions to summarize it.



# SQL

## PROJECT

Employee  
Performance  
Tracking

## SKILLS

SQL querying,  
window functions,  
case statements

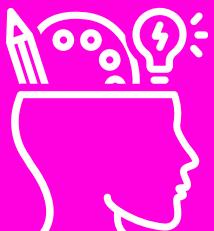
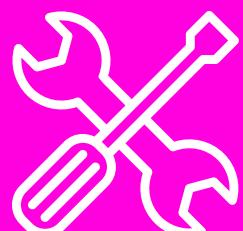
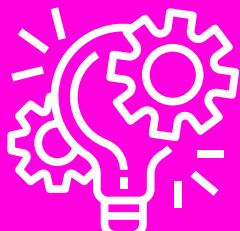
## RESOURCES

"SQL Cookbook" by Molinaro, A.,

Mode Analytics SQL Tutorial

## GETTING STARTED

Analyze an employee database to track performance over time. Use window functions to calculate running totals and case statements to categorize data.



# SQL

## PROJECT

Real Estate Market Analysis

## SKILLS

SQL querying, data manipulation, subqueries

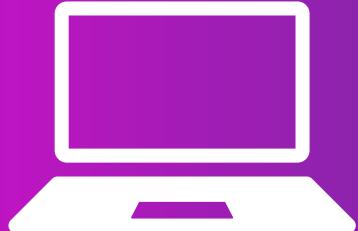
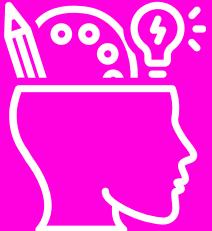
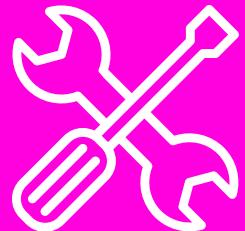
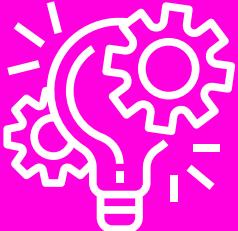
## RESOURCES

"Head First SQL" by Beighley, L.,

SQLZoo Tutorials

## GETTING STARTED

Analyze a real estate database to understand market trends. Use subqueries to handle complex data manipulation tasks.



# SQL

## PROJECT

Hospital  
Management System  
Analysis

## SKILLS

SQL querying, data  
manipulation, stored  
procedures

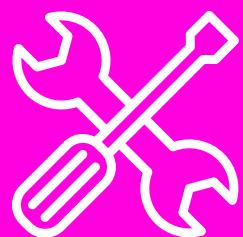
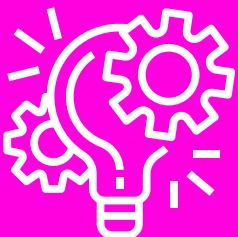
## RESOURCES

"Murach's MySQL" by Joel Murach,

Coursera SQL Specialization

## GETTING STARTED

Analyze a hospital management system database to extract insights about patient data, doctor performance, and resource allocation. Use stored procedures to automate common tasks.



# SQL

## PROJECT

Movie Database Analysis

## SKILLS

SQL querying, joins, aggregation

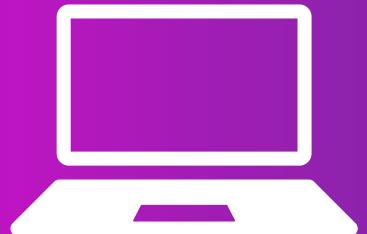
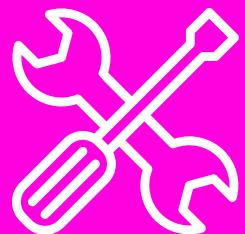
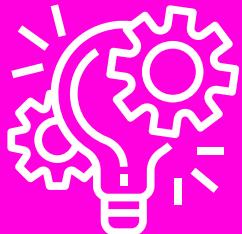
## RESOURCES

"SQL: The Ultimate Beginner's Guide to Learn SQL Programming Step by Step" by Clark, R.,

Codecademy SQL Course

## GETTING STARTED

Analyze a movie database to extract insights about genres, directors, and ratings. Use joins to combine data and aggregation functions to summarize it.



# SQL

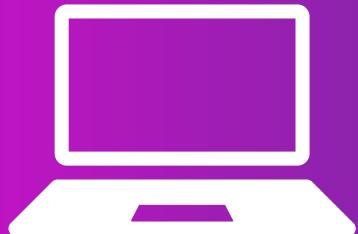
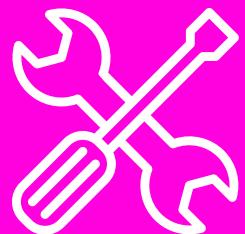
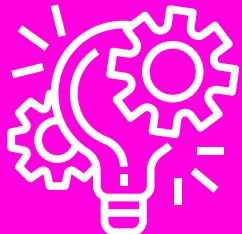
**PROJECT** Library Management System Analysis

**SKILLS** SQL querying, data manipulation, stored procedures

**RESOURCES** SQLBolt Interactive SQL Tutorial

## GETTING STARTED

Analyze a library management system database to extract insights about book loans, member activity, and resource allocation. Use stored procedures to automate common tasks.



# SQL

## PROJECT

Hotel Booking Analysis

## SKILLS

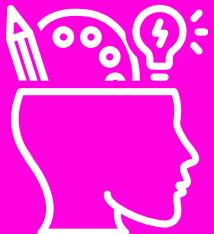
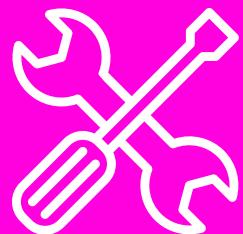
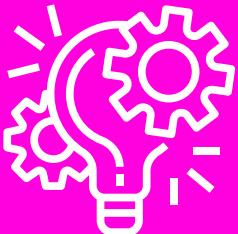
SQL querying,  
window functions,  
case statements

## RESOURCES

"SQL Cookbook: Query Solutions and Techniques for All SQL Users" by Molinaro, A.

## GETTING STARTED

Analyze a hotel booking database to understand booking trends and patterns. Use window functions to calculate running totals and case statements to categorize data.



# SQL

**PROJECT** Retail Sales Analysis

## SKILLS

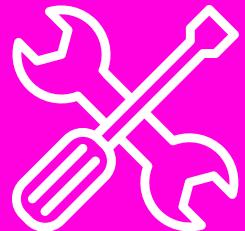
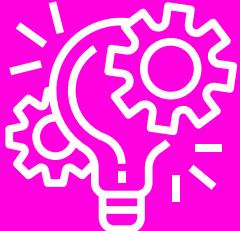
SQL querying, data manipulation, subqueries

## RESOURCES

"SQL for Data Analytics" by Valluru, U.,  
DataCamp SQL Courses

## GETTING STARTED

Analyze a retail database to understand sales trends and product performance. Use subqueries to handle complex data manipulation tasks.



# SQL

## PROJECT

University  
Management System  
Analysis

## SKILLS

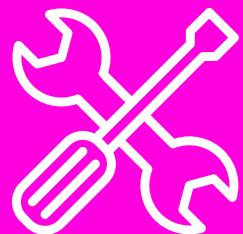
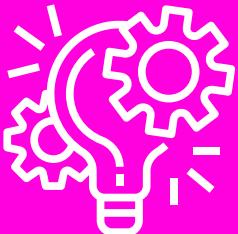
SQL querying, data  
manipulation, stored  
procedures

## RESOURCES

"Learn SQL" by Meier, U., Kaggle SQL  
Course

## GETTING STARTED

Analyze a university management system database to extract insights about student performance, course popularity, and resource allocation. Use stored procedures to automate common tasks.



# Tableau

## PROJECT

Dashboard for COVID-19 Data

## SKILLS

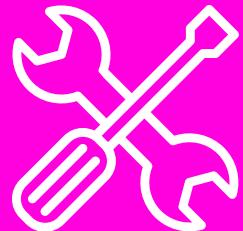
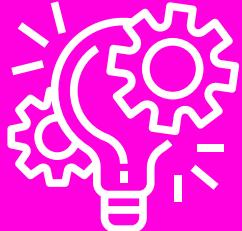
Data visualization,  
interactive  
dashboards

## RESOURCES

"Mastering Tableau" by Brown, D., Tableau Training Videos

## GETTING STARTED

Create an interactive dashboard to visualize COVID-19 data. Use Tableau's mapping capabilities to show geographic trends and filters to allow for interactive exploration.



# Tableau

## PROJECT

Real Estate Market Analysis

## SKILLS

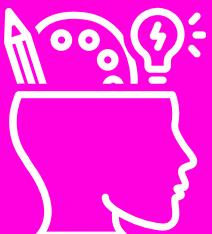
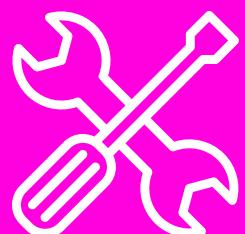
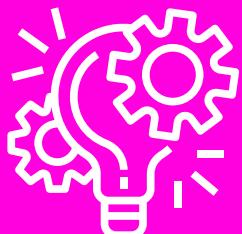
Data visualization,  
mapping

## RESOURCES

"Communicating Data with Tableau" by Ben Jones, Tableau Public Gallery

## GETTING STARTED

Analyze a real estate database to understand market trends. Use Tableau's data visualization capabilities to show patterns in the data.



# Tableau

## PROJECT

Customer Segmentation

## SKILLS

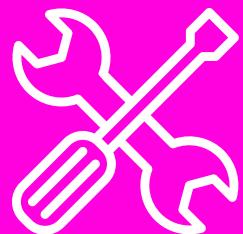
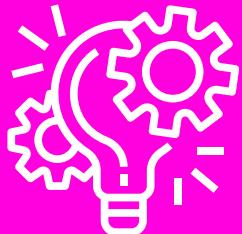
Data visualization,  
calculated fields

## RESOURCES

"Tableau Your Data!" by Murray, D.,  
Tableau Official Tutorials

## GETTING STARTED

Analyze customer data to identify distinct customer segments. Use calculated fields to create new metrics and Tableau's visualization capabilities to present your findings.



# PowerBI

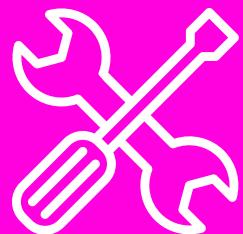
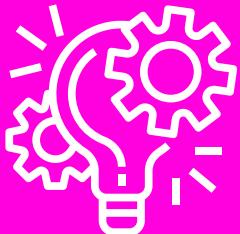
**PROJECT** Sales Performance Dashboard

**SKILLS** Data visualization,  
DAX formulas

**RESOURCES** "Pro Power BI Desktop" by Aspin, A., Power BI Guided Learning

## GETTING STARTED

Create a dashboard to track sales performance. Use PowerBI's DAX formulas to calculate key metrics and its visualization capabilities to present them effectively.



# PowerBI

## PROJECT

Financial Budget  
Tracking

## SKILLS

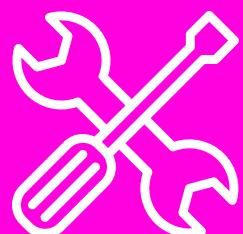
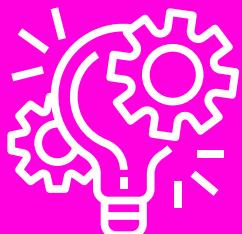
Data visualization,  
measures

## RESOURCES

"Supercharge Power BI" by Ferrari, A.,  
Power BI Microsoft Learn

## GETTING STARTED

Develop a system to track personal or business finances. Use measures to calculate totals and PowerBI's data visualization capabilities to summarize and present the data.



# Tableau

## PROJECT

Retail Sales Dashboard

## SKILLS

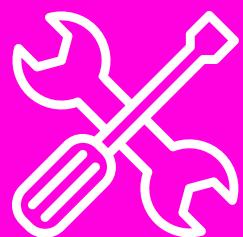
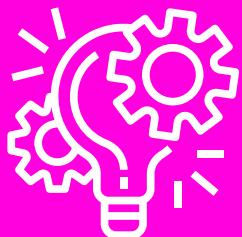
Data visualization,  
interactive  
dashboards

## RESOURCES

"Mastering Tableau 2019.1" by Rock, M.,  
Tableau Training Videos

## GETTING STARTED

Create an interactive dashboard to visualize retail sales data. Use Tableau's mapping capabilities to show geographic trends and filters to allow for interactive exploration.



# Tableau

## PROJECT

University  
Performance  
Analysis

## SKILLS

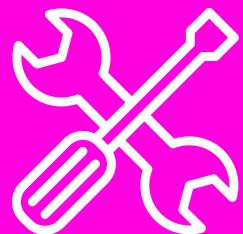
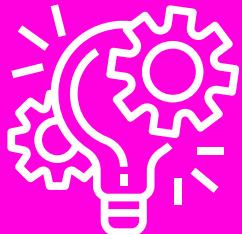
Data visualization,  
calculated fields

## RESOURCES

"Communicating Data with Tableau" by  
Ben Jones, Tableau Public Gallery

## GETTING STARTED

Analyze university data to identify performance trends. Use calculated fields to create new metrics and Tableau's visualization capabilities to present your findings.



# Tableau

## PROJECT

Airline Flight Data Analysis

## SKILLS

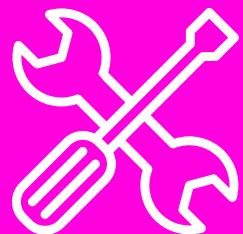
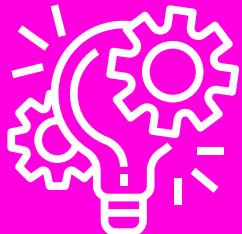
Data visualization,  
mapping

## RESOURCES

"Tableau Your Data!" by Murray, D.,  
Tableau Official Tutorials

## GETTING STARTED

Analyze airline flight data to understand flight patterns and delays. Use Tableau's mapping capabilities to visualize flight paths.



# PowerBI

## PROJECT

HR Analytics  
Dashboard

## SKILLS

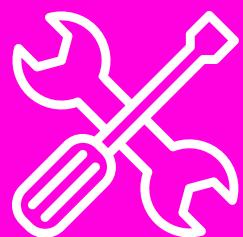
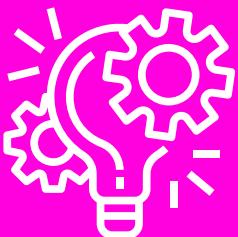
Data visualization,  
DAX formulas

## RESOURCES

"Beginning Power BI: A Practical Guide to Self-Service Data Analytics with Excel 2016 and Power BI Desktop" by Larsen, D.,  
Power BI Guided Learning

## GETTING STARTED

Create a dashboard to track HR metrics like employee attrition, performance, and diversity. Use PowerBI's DAX formulas to calculate key metrics and its visualization capabilities to present them effectively.



# PowerBI

## PROJECT

Social Media  
Analytics

## SKILLS

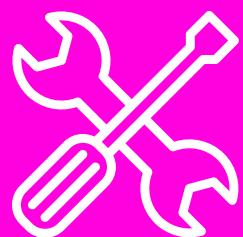
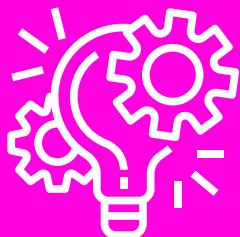
Data visualization,  
measures

## RESOURCES

"The Definitive Guide to DAX: Business Intelligence for Microsoft Power BI, SQL Server Analysis Services, and Excel" by Ferrari, A., Russo, M., Power BI Microsoft Learn

## GETTING STARTED

Develop a system to track social media metrics. Use measures to calculate totals and PowerBI's data visualization capabilities to summarize and present the data.



# Python

## PROJECT

Sentiment Analysis  
of Twitter Data

## SKILLS

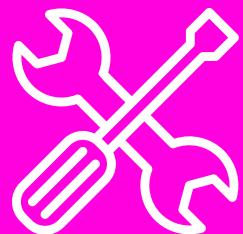
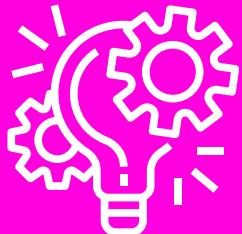
Python  
programming, NLP

## RESOURCES

"Natural Language Processing with Python"  
by Bird, S., Klein, E., & Loper, E., Sentdex  
Python Programming Tutorials

## GETTING STARTED

Analyze sentiment of tweets about a specific topic. Use Python's tweepy library to access Twitter data and nltk library for sentiment analysis.



# Python

**PROJECT** Predictive Modeling

**SKILLS**

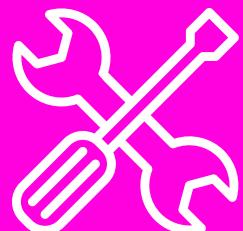
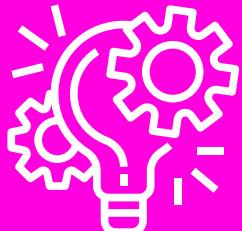
Python  
programming, scikit-  
learn

**RESOURCES**

"Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow" by Géron, A.,  
Scikit-Learn Tutorials

**GETTING  
STARTED**

Use historical data to predict future outcomes. Clean and preprocess the data with pandas, then use scikit-learn to build and evaluate predictive models.



# Python

## PROJECT

Recommendation  
Engine

## SKILLS

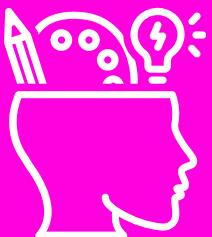
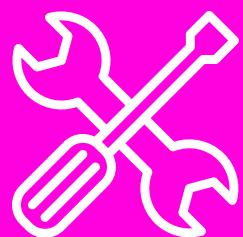
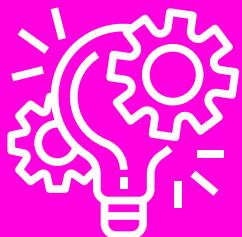
Python  
programming,  
Collaborative  
Filtering

## RESOURCES

"Python for Data Analysis" by McKinney,  
W., DataCamp Python Track

## GETTING STARTED

Build a recommendation engine for a movie or e-commerce website. Use collaborative filtering techniques to provide recommendations based on similar user behavior.



# Python

**PROJECT** Time Series Analysis

**SKILLS**

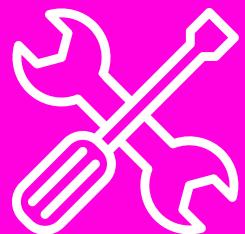
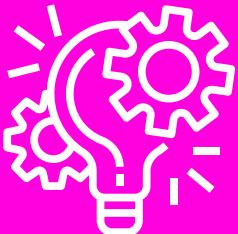
Python  
programming,  
pandas, statsmodels

**RESOURCES**

"Python for Finance" by Hilpisch, Y.,  
Machine Learning Mastery Tutorials

**GETTING  
STARTED**

Analyze time-series data like stock prices or weather data. Use pandas for data manipulation and statsmodels for time series analysis.



# Python

**PROJECT** Image Classification

**SKILLS**

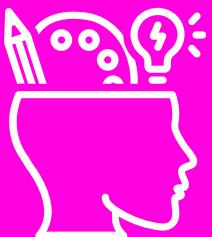
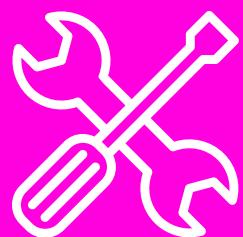
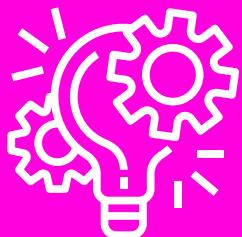
Python  
programming, Deep  
Learning, Keras

**RESOURCES**

"Deep Learning with Python" by Chollet, F.,  
PyImageSearch Tutorials

**GETTING  
STARTED**

Build a deep learning model to classify images. Use Python's keras library to build, train, and evaluate a convolutional neural network.



# Python

## PROJECT

Stock Market  
Analysis

## SKILLS

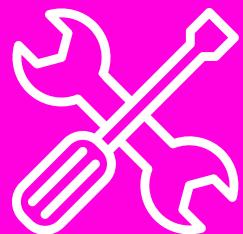
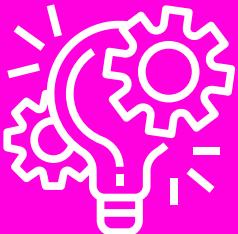
Python  
programming,  
pandas, matplotlib

## RESOURCES

"Python for Finance: Mastering Data-Driven Finance" by Hilpisch, Y., Machine Learning Mastery Tutorials

## GETTING STARTED

Analyze stock market data to understand market trends. Use pandas for data manipulation and matplotlib for data visualization.



# Python

## PROJECT

Weather Trend  
Forecasting

## SKILLS

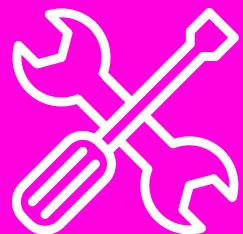
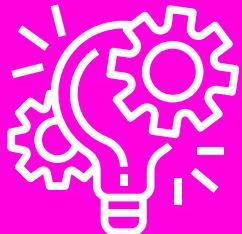
Python  
programming, scikit-  
learn, statsmodels

## RESOURCES

"Python for Data Analysis" by McKinney,  
W., DataCamp Python Track

## GETTING STARTED

Use historical weather data to forecast  
future trends. Clean and preprocess the  
data with pandas, then use scikit-learn and  
statsmodels for time series forecasting.



# Python

## PROJECT

Image Segmentation  
for Medical Imaging

## SKILLS

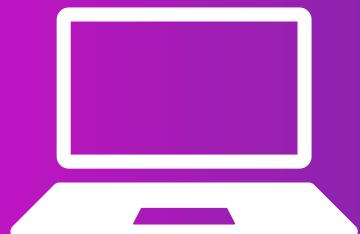
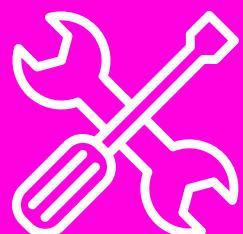
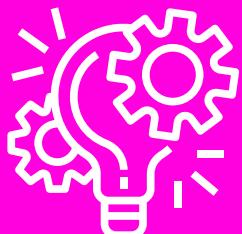
Python  
programming, Deep  
Learning, Keras

## RESOURCES

"Deep Learning for Medical Image Analysis" by Zhou, S. et al., PyImageSearch Tutorials

## GETTING STARTED

Build a deep learning model to segment medical images. Use Python's keras library to build, train, and evaluate a convolutional neural network.



# Python

## PROJECT

Spam Detection

## SKILLS

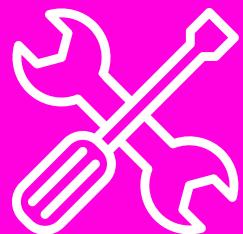
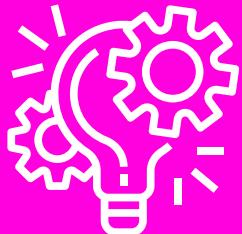
Python  
programming, NLP,  
scikit-learn

## RESOURCES

"Natural Language Processing with Python  
and spaCy" by Yuli Vasiliev,  
PythonProgramming.net Tutorials

## GETTING STARTED

Build a spam detection system for emails or messages. Use Python's nltk and scikit-learn libraries to preprocess text data and build a classification model.



# Python

## PROJECT

Traffic Prediction Model

## SKILLS

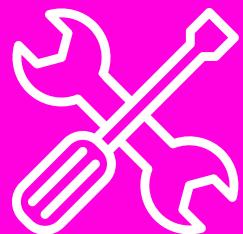
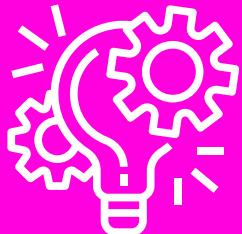
Python programming, scikit-learn, pandas

## RESOURCES

"Python Machine Learning" by Raschka, S.,  
Scikit-Learn Tutorials

## GETTING STARTED

Use historical traffic data to predict future traffic patterns. Clean and preprocess the data with pandas, then use scikit-learn to build and evaluate predictive models.



# R

## PROJECT

Customer  
Segmentation

## SKILLS

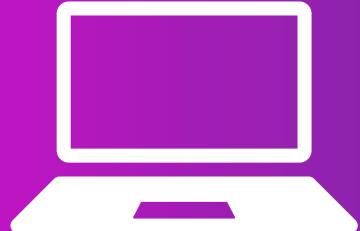
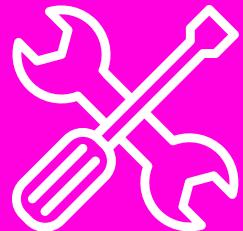
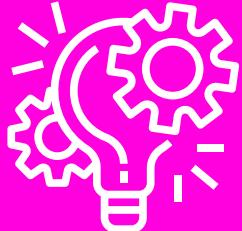
R programming,  
dplyr, ggplot2

## RESOURCES

"R for Data Science" by Wickham, H.,  
Grolemund, G., DataCamp R Track

## GETTING STARTED

Analyze customer data to identify distinct  
customer segments. Use dplyr for data  
manipulation and ggplot2 for visualization.



# R

## PROJECT Predictive Modeling

### SKILLS

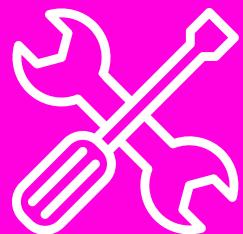
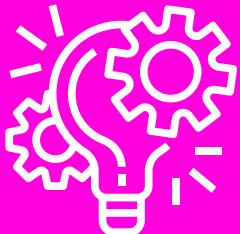
R programming,  
caret, randomForest

### RESOURCES

"The Elements of Statistical Learning" by  
Hastie, T., Tibshirani, R., Friedman, J.,  
Coursera Machine Learning with R

### GETTING STARTED

Use historical data to predict future outcomes. Clean and preprocess the data with dplyr, then use caret and randomForest to build and evaluate predictive models.



# R

## PROJECT Time Series Analysis

### SKILLS

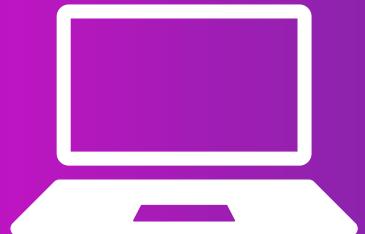
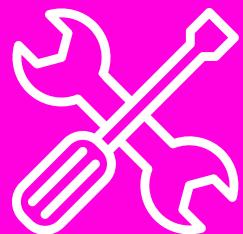
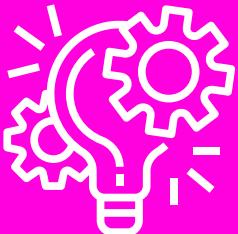
R programming,  
forecast, ggplot2

### RESOURCES

"Forecasting: Principles and Practice" by  
Hyndman, R., Athanasopoulos, G.,  
Forecasting with R

### GETTING STARTED

Analyze time-series data like stock prices  
or weather data. Use forecast for time  
series analysis and ggplot2 for  
visualization.



# R

## PROJECT

Text Mining of News Articles

## SKILLS

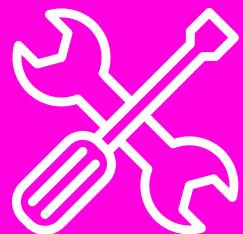
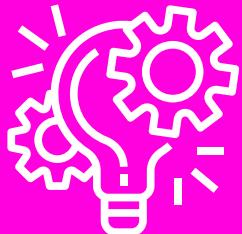
R programming, tm,  
wordcloud

## RESOURCES

"Text Mining with R" by Silge, J., Robinson, D., Tidy Text Mining with R

## GETTING STARTED

Analyze a collection of news articles to extract key themes. Use the tm package for text mining and wordcloud for visualization.



# R

## PROJECT

Sentiment Analysis  
of Social Media

## SKILLS

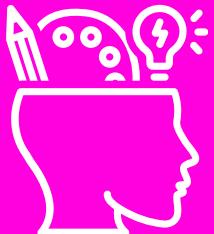
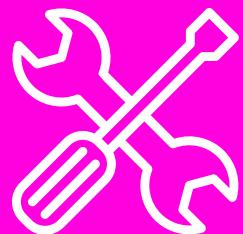
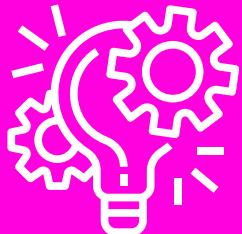
R programming,  
tidytext, ggplot2

## RESOURCES

"Text Mining with R" by Silge, J., Robinson, D., Twitter Mining with R

## GETTING STARTED

Analyze sentiment of social media posts about a specific topic. Use the tidytext package for sentiment analysis and ggplot2 for visualization.



# R

## PROJECT

Survival Analysis of Patient Data

## SKILLS

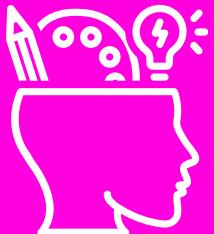
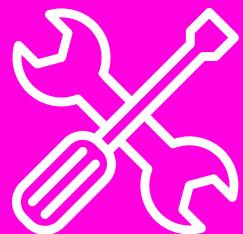
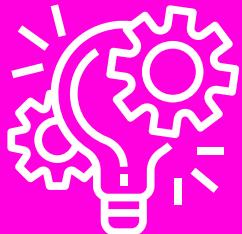
R programming,  
survival, survminer

## RESOURCES

"Survival Analysis in R" by David Diez,  
Survival Analysis with R

## GETTING STARTED

Analyze patient data to estimate survival rates. Use the survival package for survival analysis and survminer for visualization.



# R

## PROJECT

Recommender System for Movies

## SKILLS

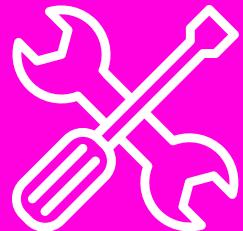
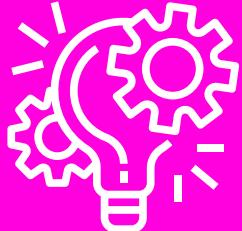
R programming,  
recommenderlab,  
ggplot2

## RESOURCES

Recommender Systems in R

## GETTING STARTED

Build a recommendation system for a movie website. Use the recommenderlab package to build the recommender system.



# R

## PROJECT Marketing Campaign Analysis

### SKILLS

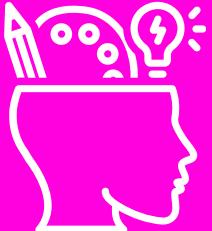
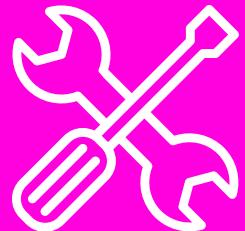
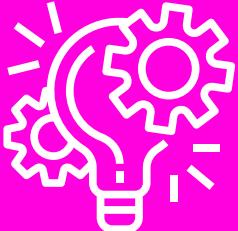
R programming,  
dplyr, ggplot2

### RESOURCES

"Data Manipulation with R" by Spector, P.,  
DataCamp R Track

### GETTING STARTED

Analyze marketing campaign data to understand its effectiveness. Use dplyr for data manipulation and ggplot2 for visualization.



# R

## PROJECT

Fraud Detection

## SKILLS

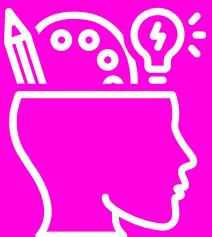
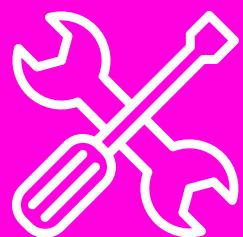
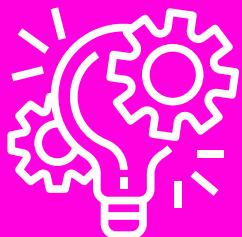
R programming,  
randomForest,  
ggplot2

## RESOURCES

"Applied Predictive Modeling" by Kuhn, M.,  
Johnson, K., Fraud Detection with R

## GETTING STARTED

Analyze transaction data to detect  
fraudulent activities. Use the  
randomForest package to build the  
detection model and ggplot2 for  
visualization.



# R

## PROJECT

Social Network Analysis

## SKILLS

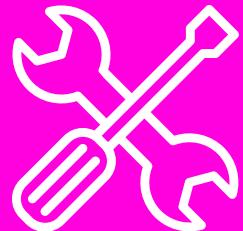
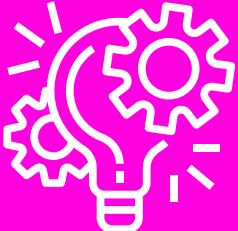
R programming,  
igraph, ggraph

## RESOURCES

"Statistical Analysis of Network Data with R" by Kolaczyk, E., Csárdi, G., Social Network Analysis with R

## GETTING STARTED

Analyze a social network to understand the structure and relationship patterns. Use the igraph package for network analysis and ggraph for visualization.



# HOORAY!

You did it! Make  
sure to like this  
post and  
download this  
resource for  
future reference.

