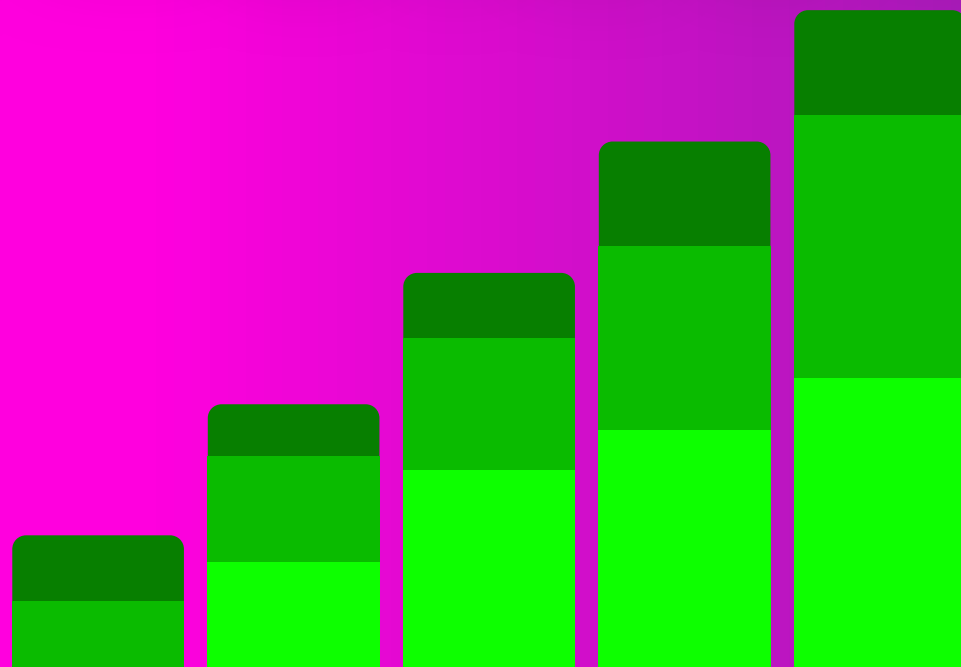# TOP 50

DATA ANALYST

PORTFOLIO

PROJECTS

ANDREW MADSON

Excel

PROJECT Marketing ROI Analysis

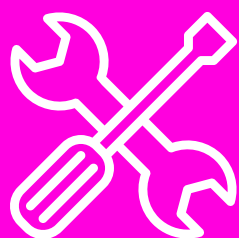**SKILLS** Pivot tables, formulas

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
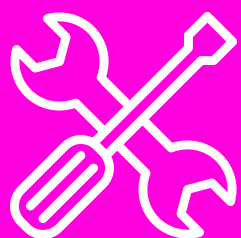
SKILLS — Solver, data validation

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.,

ExcelIsFun YouTube Channel

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

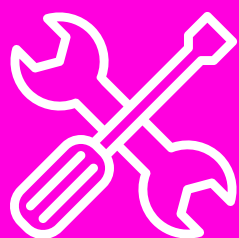**SKILLS**   Pivot tables, forecasting functions

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

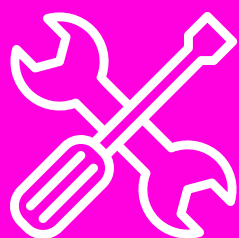**SKILLS** Conditional formatting, optimization

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.,

ExcelIsFun YouTube Channel

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

Excel

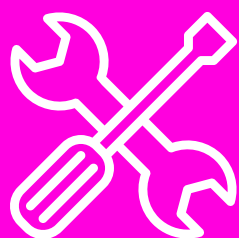|	
PROJECT	Customer Segmentation
SKILLS	Pivot tables, conditional formatting
RESOURCES	"Microsoft Excel 2019 Data Analysis and Business Modeling" by Winston, W., Excel Easy Tutorials
GETTING STARTED	Analyze customer data to identify distinct customer segments. Use pivot tables to group data and conditional formatting to highlight key findings.

Excel

PROJECT

Inventory Management

SKILLS

Conditional formatting, data validation, VLOOKUP
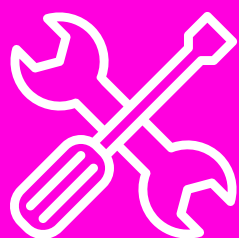
RESOURCES

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

MrExcel's Excel Tutorials

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

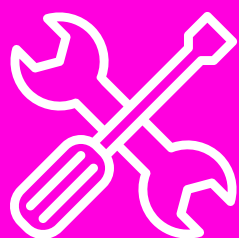|	
PROJECT	Movie Database Analysis
SKILLS	SQL querying, joins, aggregation
RESOURCES	"SQL: The Ultimate Beginner's Guide to Learn SQL Programming Step by Step" by Clark, R., Codecademy SQL Course
GETTING STARTED	Analyze a movie database to extract insights about genres, directors, and ratings. Use joins 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

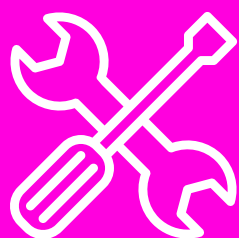|	
PROJECT	Hotel Booking Analysis
SKILLS	SQL querying, window functions, case statements
RESOURCES	"SQL Cookbook: Query Solutions and Techniques for All SQL Users" by Molinaro, A.
GETTING STARTED	Analyze a hotel booking database to understand booking trends and patterns. Use window functions to calculate 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
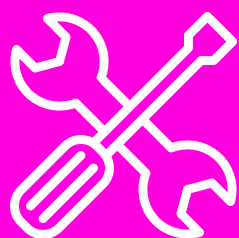
University Management System Analysis

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
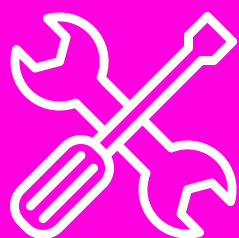
Dashboard for COVID-19 Data

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

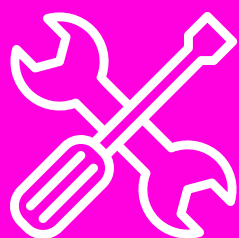|	
PROJECT	Customer Segmentation
SKILLS	Data visualization, calculated fields
RESOURCES	"Tableau Your Data!" by Murray, D., Tableau Official Tutorials
GETTING STARTED	Analyze customer data to identify distinct customer segments. Use calculated fields to create new metrics and Tableau's visualization 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

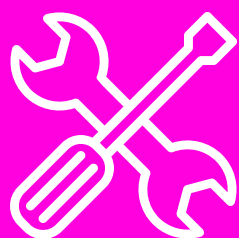|	
PROJECT	Financial Budget Tracking
SKILLS	Data visualization, measures
RESOURCES	"Supercharge Power BI" by Ferrari, A., Power BI Microsoft Learn
GETTING STARTED	Develop a system to track personal or business finances. Use measures to calculate totals and PowerBI's data visualization capabilities to summarize and present the data.

Tableau

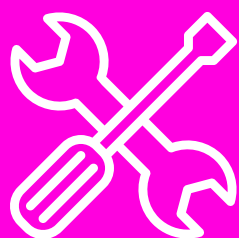**PROJECT** Retail Sales Dashboard

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.
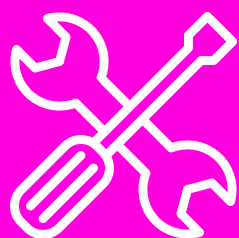
Tableau

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

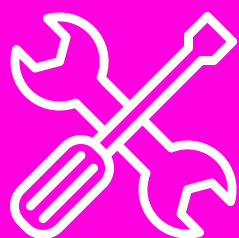HR Analytics Dashboard

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

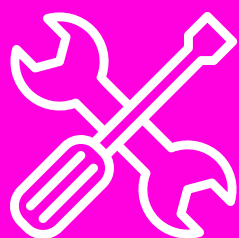Sentiment Analysis of Twitter Data

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

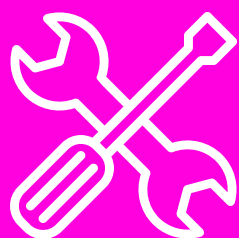|	
PROJECT	Recommendation Engine
SKILLS	Python programming, Collaborative Filtering
RESOURCES	"Python for Data Analysis" by McKinney, W., DataCamp Python Track
GETTING STARTED	Build a recommendation engine for a movie or e-commerce website. Use collaborative filtering techniques to provide recommendations 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.
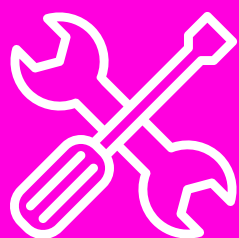
Python

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

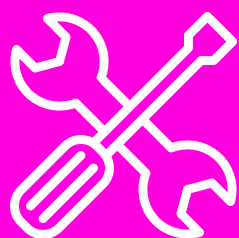|	
PROJECT	Stock Market Analysis
SKILLS	Python programming, pandas, matplotlib
RESOURCES	"Python for Finance: Mastering Data-Driven Finance" by Hilpisch, Y., Machine Learning Mastery Tutorials
GETTING STARTED	Analyze stock market data to understand market trends. Use pandas for data manipulation and matplotlib for data visualization.

Python

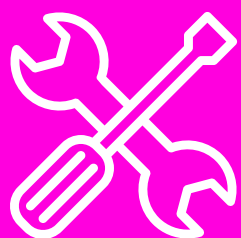**PROJECT**
Weather Trend Forecasting

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
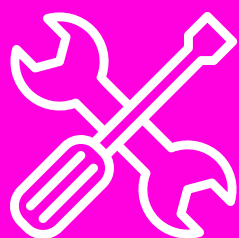
SKILLS   Python programming, NLP, scikit-learn

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
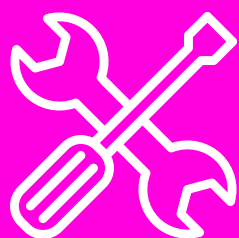
SKILLS Python programming, scikit-learn, pandas

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

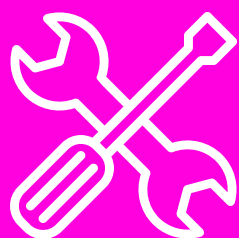|	
PROJECT	Customer Segmentation
SKILLS	R programming, dplyr, ggplot2
RESOURCES	"R for Data Science" by Wickham, H., Grolemund, G., DataCamp R Track
GETTING STARTED	Analyze customer data to identify distinct customer segments. Use dplyr for data manipulation and ggplot2 for visualization.

R

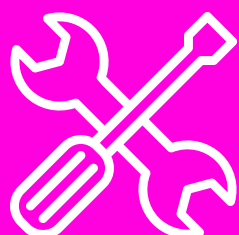|	
PROJECT	Predictive Modeling
SKILLS	R programming, caret, randomForest
RESOURCES	"The Elements of Statistical Learning" by Hastie, T., Tibshirani, R., Friedman, J., Coursera Machine Learning with R
GETTING STARTED	Use historical data to predict future outcomes. Clean and preprocess the data with dplyr, 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

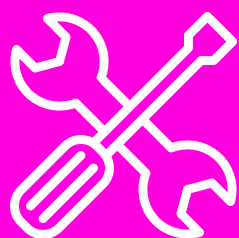**PROJECT** Text Mining of News Articles

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

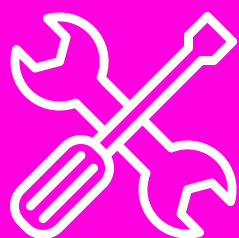|	
PROJECT	Sentiment Analysis of Social Media
SKILLS	R programming, tidytext, ggplot2
RESOURCES	"Text Mining with R" by Silge, J., Robinson, D., Twitter Mining with R
GETTING STARTED	Analyze sentiment of social media posts about a specific topic. Use the tidytext package for sentiment analysis and ggplot2 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

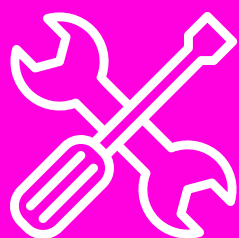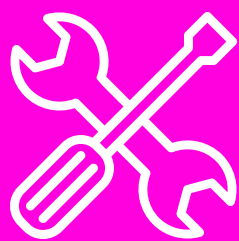|	
PROJECT	Recommender System for Movies
SKILLS	R programming, recommenderlab, ggplot2
RESOURCES	Recommender Systems in R
GETTING STARTED	Build a recommendation system for a movie website. Use the recommenderlab package to build the recommender system.

R

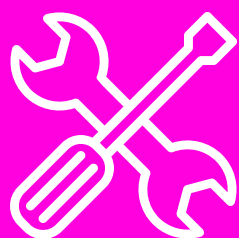|	
PROJECT	Marketing Campaign Analysis
SKILLS	R programming, dplyr, ggplot2
RESOURCES	"Data Manipulation with R" by Spector, P., DataCamp R Track
GETTING STARTED	Analyze marketing campaign data to understand its effectiveness. Use dplyr for data manipulation and ggplot2 for visualization.

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

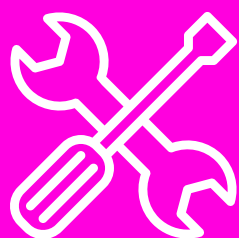**PROJECT**

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.