

Mental Health Predictor – Capstone Project



Overview

This project is part of the final exam for INSY 8413 – Introduction to Big Data Analytics. It aims to analyze and predict mental health treatment needs among tech workers using Python and visualize the insights with Power BI.

Problem Statement

Can we predict whether a person in the tech industry is likely to seek mental health treatment based on their background, workplace environment, and personal history?



Sector

Health



Dataset

- **Source:** [Kaggle – Mental Health in Tech Survey](#)
- **Format:** CSV
- **Structure:** Structured
- **Preprocessing:** Required (cleaning age, encoding categorical features, handling null values)



Tools Used

- **Python (Jupyter Notebook):** Data cleaning, EDA, modeling (Random Forest)
- **Power BI:** Interactive dashboard for visual storytelling



Features Selected

- Age
- Gender
- Family History
- Remote Work
- Mental/Physical Consequences
- Supervisor & Coworker Support
- Employer Benefits & Wellness Programs



Machine Learning Model

- **Model:** Random Forest Classifier
- **Metrics:** Accuracy, Confusion Matrix, Feature Importance

Power BI Dashboard

The dashboard includes: - Bar chart: Treatment by gender - Pie chart: Family history distribution - Line graph: Age vs treatment likelihood - Slicer: Age, support availability, wellness programs - KPI: % needing treatment

Key Insights

- Family history and lack of employer support are top predictors.
- Those aged 20–35 are more likely to seek help.
- Remote work and wellness programs influence outcomes.

Files in Repository

- `mental_health_analysis.py` – Full Python code
- `cleaned_mental_health.csv` – Clean dataset for Power BI
- `README.md` – This file
- `presentation.pptx` – Summary presentation (optional)

How to Use

1. Download the dataset from Kaggle.
2. Run the Python script to preprocess and analyze.
3. Use the exported CSV in Power BI to create the dashboard.
4. Present using the slides provided.

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“Work hard with all your heart, as working for the Lord.” – Colossians 3:23
