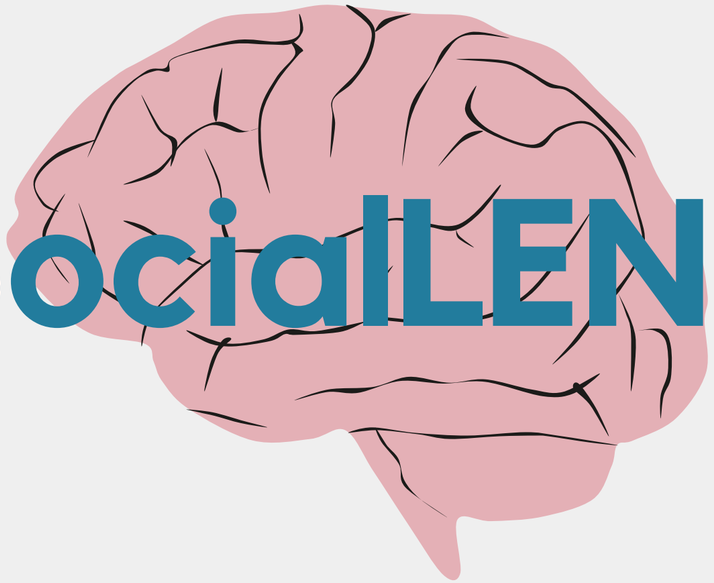
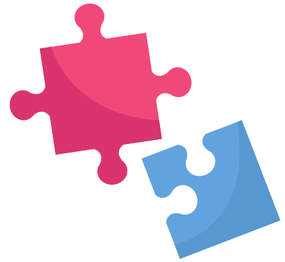
SocialLENS



A lens into your inner self



TEAM MEMBERS

Abdulrahman Yehya Salah

Mohamed Ahmed Maher Mekawey

Mohamed Ahmed Ameen

THE IDEA

The primary objective of this project is to evaluate the hypothesis that a person's personality type—specifically, whether they identify as an introvert or an extrovert—can be accurately predicted through machine learning techniques. Instead of depending on psychological assessments, this project utilizes a dataset comprising of observable behaviors, including time spent in solitude, apprehension regarding public speaking, and social media usage patterns. The fundamental idea is to develop a model capable of identifying the patterns and relationships within this behavioral data, creating a predictive model that can quickly categorize personality types based on social behaviors.

INTRODUCTION

This project investigates the potential of machine learning to categorize individuals as introverts or extroverts by utilizing behaviors instead of conventional surveys. Historically, personality assessments have relied on subjective instruments such as the MBTI or Big Five, which are often lengthy and susceptible to bias. By examining observable characteristics—like the amount of time spent alone, fear of public speaking, and the size of one's social network—the study seeks to develop a data-driven model that effectively predicts an individual's position on the introvert–extrovert spectrum, thereby providing significant benefits in fields such as psychology, human resources, and tailored user experiences.

PROBLEM STATMENT

Understanding personality types such as introversion and extraversion has important applications in psychology, marketing, education, and even job recruitment. However, traditional personality assessments like surveys and interviews, are time-consuming, subjective, and prone to bias.

The challenge is to create an automated, data-driven model that can accurately classify individuals as introverts or extroverts using observable data (e.g., text, behavior, or social media activity). This will help bridge the gap between human psychology and machine understanding by making use of machine learning algorithms for personality prediction.

So what are the Challanges

01 - EFFICIENCY

Can a computational model effectively learn the complex, non-linear patterns that distinguish introverted behavior from extroverted behavior?

02 - ANALYSIS

Which behavioral features are the most significant predictors of personality type?

OBJECTIVES

CLEAN

Data Preprocessing

To load and thoroughly clean the personality_dataset.csv. This includes handling any missing values and encoding categorical features into a machine-readable format.

ANALYSIS

EDA

To analyze the dataset to understand the distribution of each feature, identify correlations between different behaviors, and visualize the differences between the introvert and extrovert groups.

MODEL

Model Development

To train and test several supervised classification models to find the most effective algorithm for this task.

EVALUATE

Model Evaluation

Evaluate the performance of the best model(s) using key metrics like accuracy, precision, recall, and the F1-score.

RELATED WORKS

- Memprediksi Kepribadian (Introvert vs Extrovert) dengan Machine Learning This article by Helmy Satria systematically compares multiple baseline models on the same dataset. Their findings provide a clear performance hierarchy and link to the associated Kaggle notebook. The results were:
- Support Vector Machine (SVM): 91.7% accuracy
- Logistic Regression: 90.7% accuracy
- Decision Tree: 85.9% accuracy
- **https://helmysatria.com/memprediksi-kepribadian-introvert-vs-extrovert-dengan-machine-learning/**
- Introvert vs Extrovert using Machine Learning This Kaggle notebook provides a comprehensive Exploratory Data Analysis (EDA) of the dataset. It includes visualizations of the feature distributions and correlations, which are essential for the preprocessing and feature selection stages of your own project.
- **https://www.kaggle.com/code/miadul/introvert-vs-extrovert-using-machine-learning**