

# User Profiling: Case Study

User profiling is the process of creating a detailed description of someone based on their personal information, characteristics, interests, online behavior, and other relevant attributes.

The given dataset comprises a diverse set of user metrics collected from an online platform, consisting of 1,000 user profiles with 16 distinct features. These features include demographics (age, gender, income level, and education), online behavior (likes and reactions, followed accounts, device usage), engagement with content (time spent online during weekdays and weekends, click-through rates, conversion rates), interaction with ads (ad interaction time), and user interests.

Your task is to develop a robust user profiling and segmentation system that leverages machine learning and data analysis techniques to categorize users into distinct segments. By analyzing user interaction data, demographic information, and engagement metrics, identify meaningful patterns and clusters within the user base. The ultimate goal is to enable businesses to tailor their advertising campaigns to the identified segments, thereby increasing ad relevance, user engagement, and conversion rates while optimizing ad spend.