

SPRINGBOARD CAPSTONE PROJECT #2

Diagnosing Autism in Demographics

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Problem:

Given the rising number of global Autistic Spectrum Disorder (ASD) cases, there is interest in developing new methods to diagnose this condition. A study by the Manukau Institute of Technology surveyed 704 individuals in a questionnaire if they show symptoms of ASD; those who fulfill at least seven out of ten behavioural features are listed as diagnosed with ASD. However, while this study does offer some insights into this condition, there are still many aspects about autism that are relatively unknown such as whether ethnicity or gender is more likely to be associated with ASD.

Clients:

The clients who would benefit the most from this study are social workers and autism researchers. By identifying communities who are more likely to be diagnosed with this condition, social workers can adjust their outreach efforts. Furthermore, by comparing the ethnicity and nationality variables in regards to the ASD survey score, researchers can study more about the nature vs nurture aspect of autism.

Approach:

The main approach for this project would be comparing the population in each ethnic and gender group for autism. The survey scores will be plotted against ethnic groups and gender to identify any type of correlation between them. Furthermore, this data would undergo Logistic Regression, KNN Classifier, and Random Forest Classifier to determine the likelihood of a particular demographic having autism.

Analysis:

Studying the correlation of autism with nationality and ethnicity would offer much insight into whether genetics or upbringing would have a greater impact on a person showing symptoms of autism. Although autism is assumed to be a genetic condition, it needs to be identified which ethnic groups are most likely to have this condition. Furthermore, even if ASD is genetically linked, there is the issue of upbringing as people may show different degrees of autism (as denoted by the survey score). Then there is also the issue of gender as men and women may show different degrees of autistic symptoms. By identifying the genetics groups of autism could help anthropologists study the history of how this condition first appeared in humans.

Deliverables:

The results of this analysis will be presented as a report explaining the process and results. Additional information such as programming codes and raw data will be stored on a GitHub repository.

Sources and Links: <https://www.kaggle.com/faizunnabi/autism-screening>