Final Report

This Project is being mentored by Dr. Kalyan Kalwa who is the founder of Health Innovators which is a digital health incubator. The primary mission of this project is to provide the data which can help in finding the best possible mental health treatment for the Asian community especially women who are suffering from anxiety and other behavioural disorders because of the stress and many other factors in our daily life.

The data concerned consists of information regarding Asian therapists.
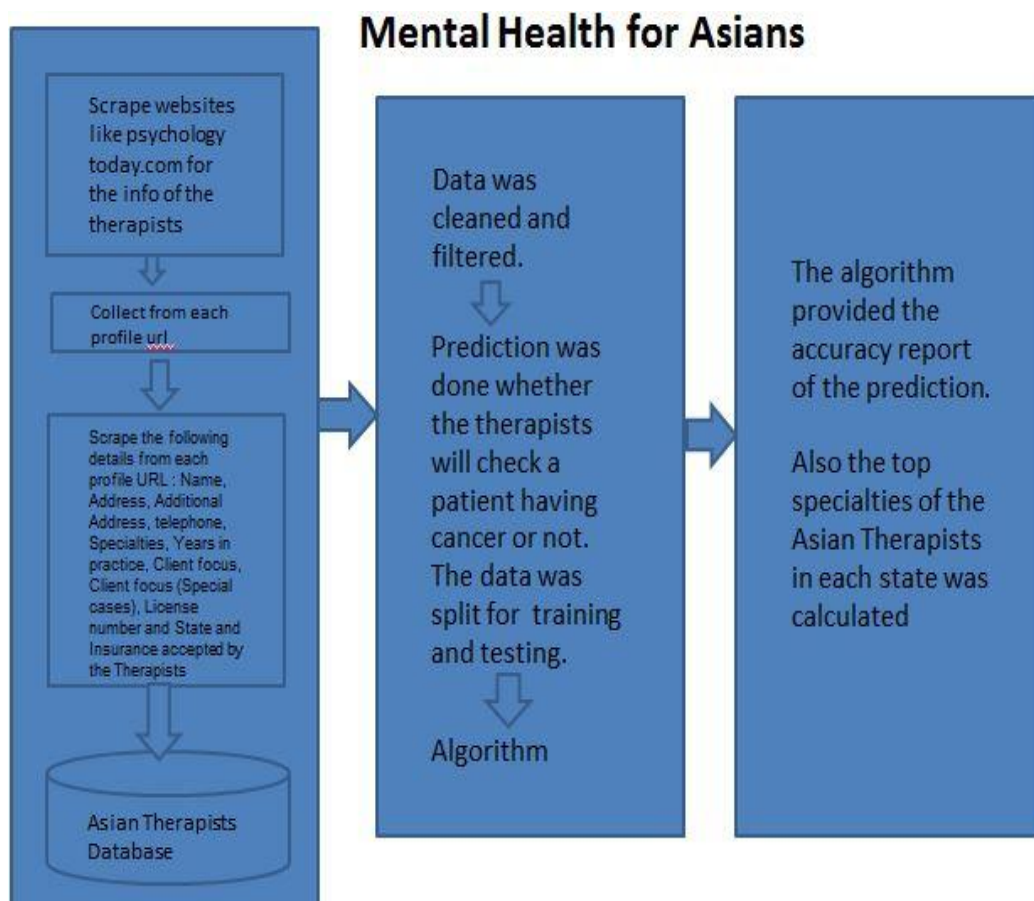
1.1 Data Collection

- Scraped mainly websites like Psychology Today.com which helped in providing the necessary information regarding the Asian therapists.
- Scraped the following details from each profile URL: Name, Address, Additional Address, telephone, Specialties, Years in practice, Client focus, Client focus (Special cases), License number and State and Insurance accepted by the Therapists. Note that the profile of each Asian Therapist present in each state in the USA was scraped in the above manner.
- Total of approximately 3000 Profile URLs approximately from the websites were found and accordingly the data as per requirement and understanding was gathered.

1.2 Data Pre-processing

- Removed rows with missing information.
- Transformed the missing values in the columns into a non-null value in order to remove any complications while training and testing of the data
- Filtered the data based on requirement and necessity.
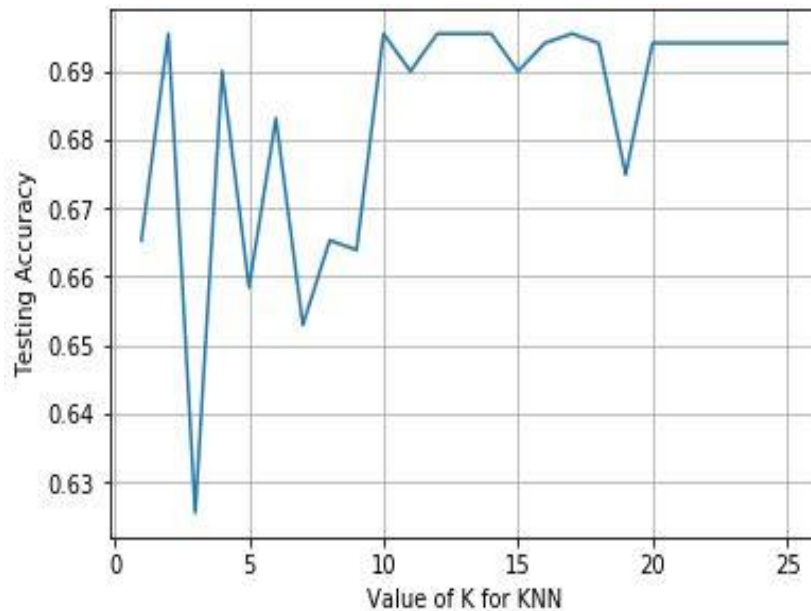- Standardized Naming Convention.

1.3 Methodology

- Based on the data present, we further filtered the data frame in order to find out some logical pattern with the help of which we can provide a much clear insight of the data gathered.
- Using the areas of expertise mentioned about the Asian Therapists and also the special cases of their client focus, we predicted whether the therapist will treat a patient who has cancer or not. Note that we extracted the value related to "cancer" from the special cases column and represented them numerically and then calculated the accuracy of the prediction using two Machine learning algorithms.
- Also using the data, we have managed to find out the top or rather the most common specialties of the Asian therapists in each state.

Mental Health for Asians

Scrape websites like psychology today.com for the info of the therapists

⇩

Collect from each profile url

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Scrape the following details from each profile URL : Name, Address, Additional Address, telephone, Specialties, Years in practice, Client focus, Client focus (Special cases), License number and State and Insurance accepted by the Therapists

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Asian Therapists Database

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Data was cleaned and filtered.

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Prediction was done whether the therapists will check a patient having cancer or not. The data was split for training and testing.

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Algorithm

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The algorithm provided the accuracy report of the prediction.

Also the top specialties of the Asian Therapists in each state was calculated
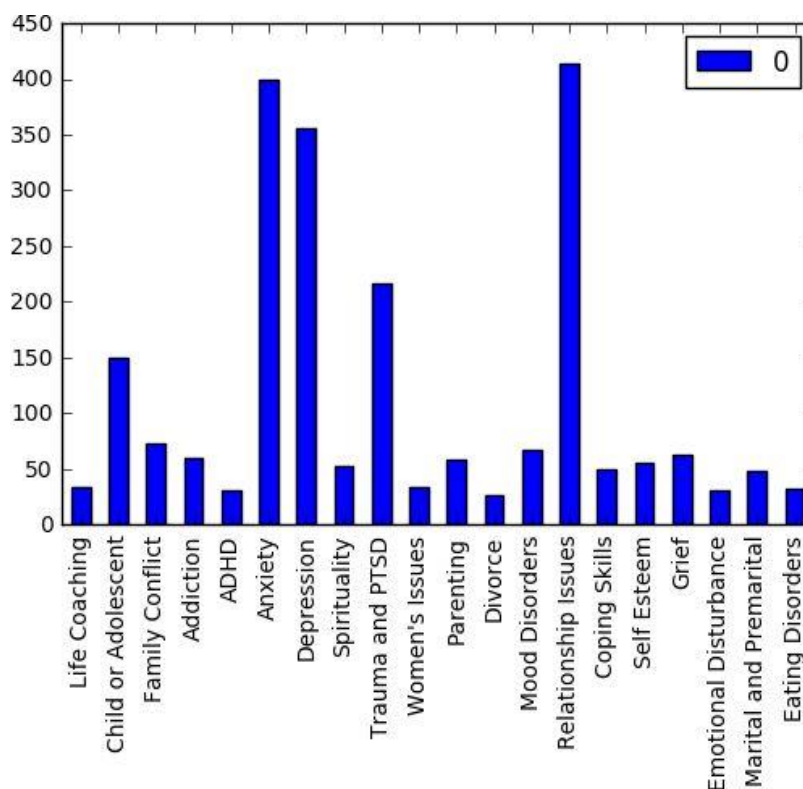
1.4 Results

- The prediction after applying K-nearest neighbor algorithm was seen to be as 69.5% accurate whereas, with the help of decision tree classifier algorithm it was 68.9% accurate.

- Below here, we have plotted the specialties of the Asian therapists residing in California. Note that the top or the most common specialties generated will provide the patients an idea as in which state in the USA has better prospects of treatment regarding a particular anomaly. Also if we see it from the Therapist's point of view, then he/she will also get an idea that which area will help him/her in getting the best source of income. Like here for e.g., the picture below shows the plot for specialties in California. A therapist who has an expertise in Relationship issues, Anxiety and depression will find California as a much better source of income and will surely be inclined to move in there. So, it is kind of a win-win situation for both.

Life Coaching	33
Child or Adolescent	150
Family Conflict	72
Addiction	59
ADHD	31
Anxiety	399
Depression	356
Spirituality	52
Trauma and PTSD	216
Women's Issues	34
Parenting	58
Divorce	26
Mood Disorders	67
Relationship Issues	414
Coping Skills	49
Self Esteem	55
Grief	62
Emotional Disturbance	30
Marital and Premarital	48
Eating Disorders	32

A bar representation of the Specialties of Therapists in California

1.5 Future Work

- Including more data labels or rather information in order to provide a much better data insight besides, improving the accuracy score on our predictions.
- Expanding the work to more communities.