**MPM: My Perfect Meal app**

Consumers often face challenges when making dietary decisions outside their homes: make a healthy choice or a delicious one. In most cases, mood and appetite dictate their subsequent meals. Although some consumers suffer from health constraints and disorders, the inability to choose the healthier option is due to a lack of knowledge on delicious alternatives.

To resolve this issue, consumers often turn to restaurant-based mobile applications to find a healthy alternative. The majority of the applications (e.g. Yelp, FourSquare) consider only a general user preference such as fish, taco, or Chinese cuisine. Although these options do provide restaurant-based recommendations, they neglect crucial information such as ingredient preferences, health goals, medication constraints, health constraints, and current appetite. Occasionally, consumers will discover new restaurants with a seemingly endless list of meals that may not be healthy or safe for them.

My Perfect Meal app (MPM) provides the consumer with a bespoke meal recommendation provided from the restaurants’ menu. MPM will make its suggestion based on the user’s ingredient preferences, health goals, current health status, previous meal history, medication usage, and current mood or appetite. The user may input and update data including: a list of medications, health disorders, ingredient likes and dislikes, as well as health goals (e.g. lose weight, gain weight, or maintain weight.) The application will utilize an algorithm, which will analyze the data and provide a healthy alternative meal from a local restaurant.

Once a meal has been recommended and accepted, the user will be prompted to rate individual ingredients and the overall meal. These ratings will be stored and tracked by the application. A second round of analysis will be conducted before the next recommendation. This constant learning process will ensure the user is always receiving meal recommendations based on their preferences, thus leading to a more enjoyable and healthy suggestion.

**Intellectual Merit**:

Continuously updating and reconstructing recommendations based on changing preferences and ratings will constitute a technical challenge. The data collected through the user will be stored on the application. Utilizing various dedicated databases, the application should also include previously populated categories to meet expectations (e.g. medication, health disorders.) A robust and flexible database schema will be utilized for fast searches and lookups. Additionally, the learning algorithm must be able to connect links present between the user inputs and the information provided in the app to make highly accurate and intelligent recommendations.

**Broader Impact**:

My Perfect Meal app has the potential to change the way consumers make daily decisions in their meal plan. Through recommendations, the user may finally reach health goals which otherwise seemed impossible. The application may also set the standard for all health apps in the Application Store. Many applications do not consider variables, which may solely be responsible for a consumer choosing their meal (e.g. health goals). With the introduction of app learning, consumers will have options specifically designed for them.