

# Resurprise Me!

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## The problem

Not knowing what to eat is a common occurrence, especially with young, single people who don't have time to look up recipes. There are some solutions to this such as Supercook, which suggests recipes based on the ingredients you have. The problem to these apps though, is if you have a long list of ingredients, the app gives you a long list of possible recipes. What we want, is a small number of recipes to choose from, based on our previous choices. There are many advanced factors which we could take into consideration such as time of day, new popular recipes online, and possibly even the weather.

## The solution

To accomplish this, we will use machine learning techniques to predict which recipe the user wants to make, not just what recipe the user has the ingredients for. We will allow the user to add his favorite recipes, possibly through a simple http web link. We will teach our learner to parse a few common recipe websites for the ingredient list of the given recipes. We will allow the user to input what ingredients they have in their cupboards. If the user feels like going to the grocery store, our program would be able to predict the best recipe and tell the user what ingredients they need to pick up for it. If the user feels like staying at home, the predictor can make the best choice based solely on what ingredients the user has on hand.

## Modularity

Resurprise Me will be very modular and easily built upon. As new recipe aggregators become popular, we can teach Resurprise Me how to parse those website. If we find that users are trying to submit their favorite recipes from unknown websites often, we can make note of those websites and prioritize development in that way.

If we find that our ML learner is not performing well, then we will easily be able to swap it out for another one. Weka has a wide selection of classifiers which all take in the same form of data, and output a classification in the same way.

## Risks

The core functionality is that of a recipe predictor, but to give meaningful and accurate predictions, we need a large dataset. If we do not have any previous examples to draw from, our program is no better than simple giving a random recipe based on the ingredients the user has on hand. To build a dataset for all users, we will track the predictions of each user (anonymizing it to protect the users' privacy). That crowd-sourced data will be hosted online and fetched by each user. Our predictor will use that sample dataset to make the recipe prediction.

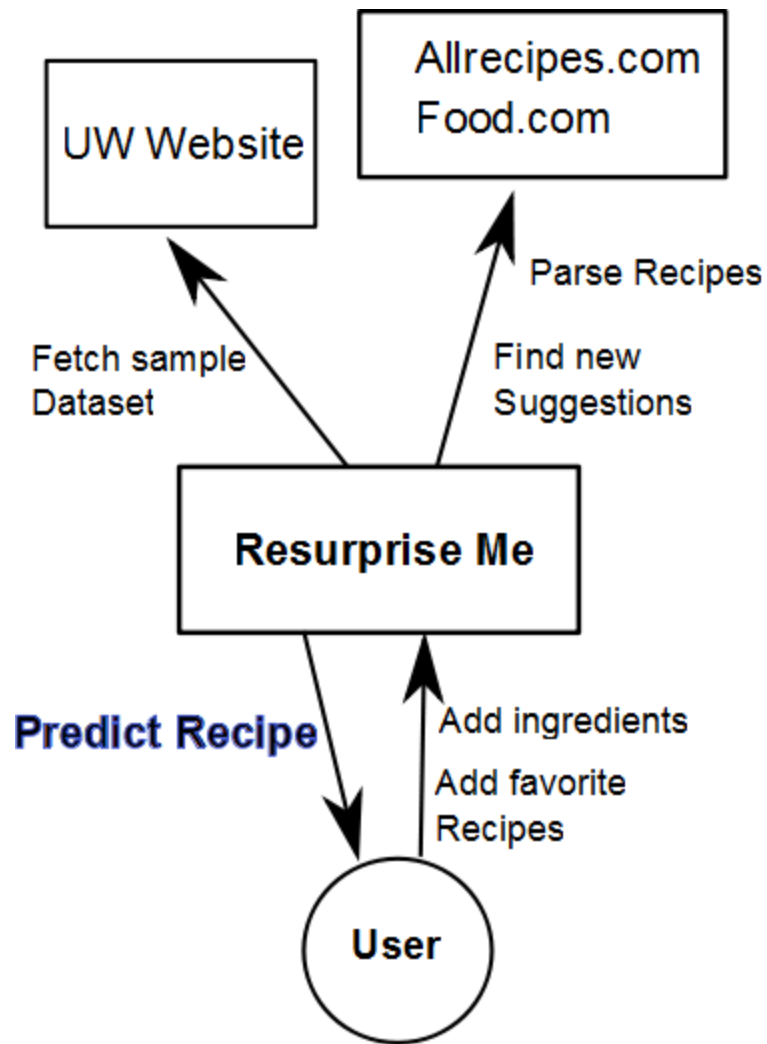


Fig 1: Diagram of connections and data flow