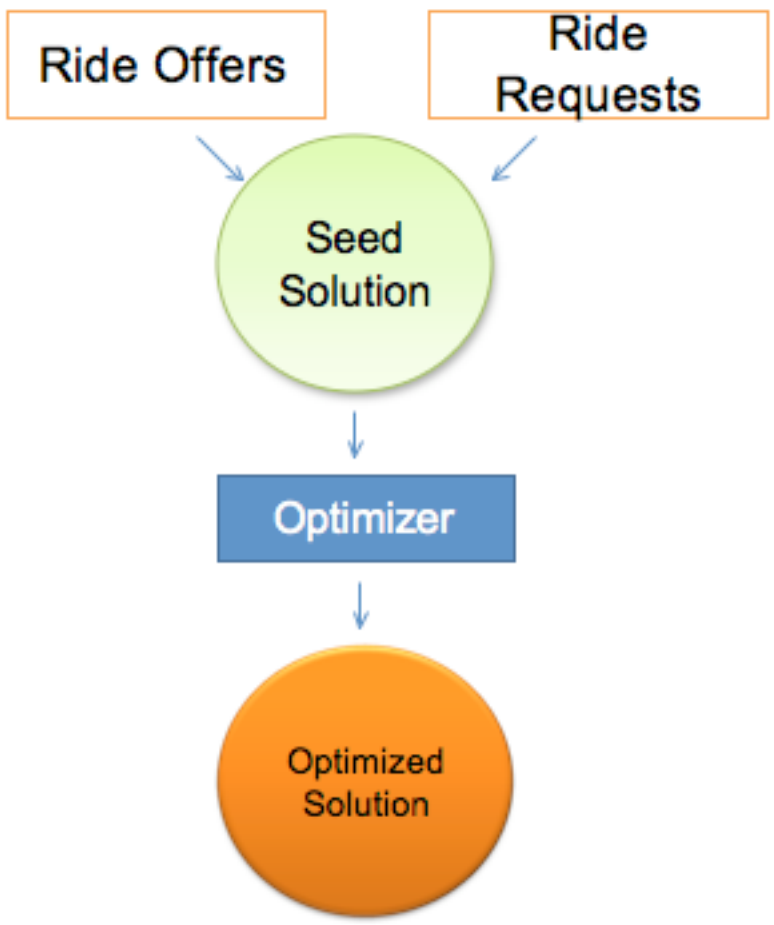
How We Find an Optimal Solution

In order to match users, we utilize three different Optimizers.

An Optimizer takes in a set of drivers and riders, and creates a “seed solution.”

A Solution sets up Rideshares which initially contain only the drivers.



The Optimizer applies an algorithm to find an optimal result. It compares different solutions using a scoring function, and generates the highest scoring solution it can, returning it as the optimized solution.

The score of a given solution is:

Number of Riders Matched + Number of Drivers Matched + ∑(drivers’ seed distances)/∑(rideshares’ final distances)

The whole part of the score represents the primary criteria for comparing solutions. It consists of the total number of users matched.

Our secondary criteria for a good solution is the fraction. It gives us an idea of the average driver deviation from their original route.
A smaller fraction means shorter deviations.