**Module Description:**

**Employer agent:**

This agent is responsible for job posting, configurable job criteria importance weightings, interacting with the Job Search agent to ensure only valid jobs appear in listings and formal housekeeping for all closed and expired jobs in the form of automatic archiving.

**Job Search agent**:

This agent is the workhorse of the system. Its responsibilities include dynamically and intelligently adjusting search criteria based upon fuzzy preference rules when no match is found from the dynamic sent by the Applicant agent. A calculation of expected utility is performed for each job result matching the dynamic using the employer importance preference for the specific job as the weighting and the applicant importance preference as the probability matrix. This agent is also responsible for sorting in an efficient manner the results by expected utility in descending order (highest to lowest) and passing this organized result to the applicant agent for presentation to user.

**Agent based Utility**

Utility functions can be used to model preferences of agents. Expected utility theory has dominated the analysis of decision making under risk. It has been generally accepted as a normative model of rational choice and widely applied as a

descriptive model of economic behavior. Proponents of Subjective Expected Utility (SEU) theory have offered many axiomatisations of their model. One approach develops utility and subjective probability as distinct concepts and provide explicit axioms which justify the combination of these into an expected utility ranking of the strategies (options, actions, prospects) before a decision maker.

**Job Search Theory**

In a dynamic labor market, the process by which people find new jobs is important not only to the individuals themselves but also to policymakers and scholars. Job-search models offer some solutions by considering factors that determine individuals’ demands and their prospect for finding an acceptable job offer. It attempts to describe the problems faced by individuals and propose strategies for making optimal decisions. This research focuses on Discrete Time Job Search. In Discrete Time Job search, the individual is interested in choosing a policy (i.e. a sequence of decision rules) that determines whether or not to accept any particular

job offer .The eventuality of the job-offer is referred to as the outcome and is dependent on preferences of the searcher such as skills, pay, the location of the employment opportunity, and the willingness of the employer to employ the searcher.