

## **Semantic Search and Filtering for Talent Hunting**

Personforce, a market leader in online HRM solutions, and NUST-SEECS, Pakistan's leading engineering university have collaborated to come to a single platform to develop and implement a cutting edge new age technology – semantic search and filtering in job portals. Semantic searching is a process used to improve online searching by using metadata from semantic networks to disambiguate queries in order to generate more relevant results. This technology is relatively recent and few have tried to implement it to existing scenarios. Personforce and NUST realized the great potential in such technology and saw it as a multifaceted way to increase the efficiency of job portals by automatically reducing noise in search results for both the job seekers and employers. Within the scope of this project, this technology was utilized to tackle some of the bigger challenges faced in an HR portal, such as automatic resume-job matching and filtering, and enhancements will be done to optimize functionality.

### *Key Objectives*

- To build open ontology for explicitly representing semantics in resumes and job descriptions.
- To implement information extraction methods for semantics discovery and aggregation of skill information (competences) from resumes.
- To research and develop methods for semantic search in job descriptions and resumes.
- To research and develop methods for “expert finding” in order to realize automatic recommendations and filtering of job applicants.
- To implement methods for semantic search and matching for both employers and job seekers.
- To develop and standardize “open resume” infrastructure enabling reusing of resumes and job postings across the job boards.

### *Significant Results*

- Ontology design for jobs and resumes.
- Design of information extraction framework to extract semantic information from jobs and resumes in unstructured format.
- Development of methodology for NLP to Semantic search.
- A system that would recommend profiles against jobs to employers based on based on candidate skills.
- One of the team members attended GATE Training Workshop in UK and also become the first certified GATE professional in the country.
- Our research has been recognized at international forums such as IEEE International Conference in Semantic Computing 2013.