

An Indian-Australian research partnership

**Project Title:****Multilingual Parameter Projection****Project Number**

IMURA0322

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**Research Academy Themes:****Highlight which of the Academy's Theme(s) this project will address?**

*(Feel free to nominate more than one. For more information, see [www.iitbmonash.org](http://www.iitbmonash.org))*

1. **Advanced computational engineering, simulation and manufacture**
2. Infrastructure Engineering
3. Clean Energy
4. Water
5. Nanotechnology
6. Biotechnology and Stem Cell Research

**The research problem**

Natural Language processing today is heavily dependent on annotation of text and application of machine learning techniques. However, creating annotated data is a costly affair in terms of time, money and manpower. At IIT Bombay through our work on PROJECTION we have shown that it is possible to leverage the work done for one language for the NLP of another language. The problem in question that we have tackled is the problem of word sense disambiguation. The results as far above the baseline values, even though there is some degradation in the performance when OWN annotation is used.

We propose to carry forward this idea to many NLP situations like disambiguation (word and structure), sentiment analysis, shallow parsing and so on and so forth. This is fundamental kind of work benefitting a wide gamut of NLP problems.

**Project aims**

As above

**Expected outcomes**

The outcomes will be Natural Language Processing systems in many languages for a range of problems like disambiguation, translation and sentiment detection.

**How will the project address the Goals of the above Themes?**

The proposed project directly benefits the area of advanced computing of which language technology is definitely a part. The perspective is that of Artificial Intelligence or Intelligent Computation.

**Capabilities and Degrees Required**

The student should be proficient in programming with very good grasp of data structures and algorithms. Exposure to linguistics and/or NLP will be an advantage. Good foundation of statistics and probability is required.