Summary
The HLT course introduces applications of human language technology focusing on accessing text information across three types of barriers: the quantity barrier (large repositories), the cross-lingual barrier, and the subjective barrier (human interactions).

Content
The following technologies will be studied for each barrier to information access:

- **The quantity barrier**: information retrieval, web search, document classification, topic models, learning to rank, question answering, recommender systems.
- **The cross-lingual barrier**: machine translation (history of the field, presentation of rule-based and of statistical systems including phrase-based and tree-based ones, domain adaptation, the use of syntax and semantics), methods for text alignment, issues and metrics for MT evaluation, cross-language information retrieval.
- **The subjective barrier**: sentiment analysis, subjectivity detection, analysis of human exchanges (spoken or written) for information access, search within multimedia archives.
- Conclusion on the bases of HLT research: defining a problem, building reference data, finding features for machine learning algorithms, training the algorithms, evaluating and analyzing the performance.

Keywords
Human language technology, language engineering, information retrieval, machine translation.

Learning Prerequisites

**Recommended courses**
At least one prior course in statistics, machine learning, computational linguistics, or artificial intelligence. Programming proficiency in a language such as Perl or Java.

Assessment methods
Project report and oral presentation.

Resources
Websites

• http://iict-space.heig-vd.ch/apu/hlt-course/