# logo-medWorkshop #4: Machine Translation

Artificial Intelligence (AI) is the area of Computer Science that deals with "the science and engineering of making intelligent machines" [McCarthy]. Natural Language Processing (NLP), also known as computational linguistics, is the field of AI concerned with getting computers to understand and generate human languages – i.e., languages like English, Arabic, or Swahili, rather than computer languages like Java or C++.

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| Since the invention of the computer, people have worked hard to build a computer translation system. Sixty years later, we have good translation systems (see example below), but they are far from perfect. | wargames.jpgwargames2jpg.jpg |

Modern machine translation works just like the examples in this workshop. Lots of example translations in two languages are shown to a computer (for example, an English sentence and its translation into Russian). The computer uses statistics to learn how to translate different words and phrases. Then when it sees a new sentence, it can try to generate a translation based on what it has learned.

Like many areas of CS, NLP is a very interdisciplinary field, encompassing computer science, linguistics, psychology, cognitive science, and human-computer interaction.

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| translation-ex.PNG  Arabic-English translation by translate.google.com | Related Columbia Classes This workshop is most related to the “Artifical Intelligence” track.   * COMS W4701 Artificial Intelligence * COMS W4705 Natural Language Processing * COMS W4706 Spoken Language Processing * COMS W4771 Machine Learning * EECS E6870 Speech Recognition * COMS E6998 Topics in Speech Processing: Computational Approaches to Emotional Speech * COMS E6998 Search Engine Technology |