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# HMX Short Course

## Natural Language Processing in Health Care

Learn about the advances in artificial intelligence that are transforming the use of natural language processing (NLP) in health care, and how this new technology could impact the medical field.

Health care generates a staggering amount of data, producing thousands of exabytes every year. A significant proportion of this is in the form text, including clinical notes such as visit summaries, discharge summaries, radiology reports, and operative reports. Within these notes, there is a wealth of information that may lend insight into patients' history, conditions, and course of treatment; however, it has been difficult to incorporate this data into analysis pipelines due to the unstructured nature of text. Recent advances in artificial intelligence (AI), including the development of large language models (LLMs), have transformed natural language processing such that computers can effectively work with text for a variety of tasks that include summarization, translation, extraction of key terms, and question-answering.

Understanding these recent advances and the major developments that enabled them will provide anyone working in health care and related sectors with a strong basis for understanding future developments in this field. This short course offers a unique way for professionals to learn from leading experts about the key concepts and evolving impact of NLP and AI techniques in health care.

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### Topics Covered

#### Natural Language Processing in Health Care

- Overview of the Importance of NLP and AI in Health Care
- The Value of Clinical Notes and NLP
- Example Note & Task Walkthrough
- Strengths and Weaknesses of Using NLP on Clinical Notes
- The Building Blocks for State-of-the-Art NLP
- From Sentences to Model Input
- Deep Learning for NLP
- The Large Language Model "Revolution"
- Improving LLMs for Tasks of Interest
- Continuous Improvement of LLMs
- Evolving Applications of AI and NLP in Health Care Systems

HMX Short Courses feature targeted lessons on the latest medical science information and advancements to keep learners up to date.