



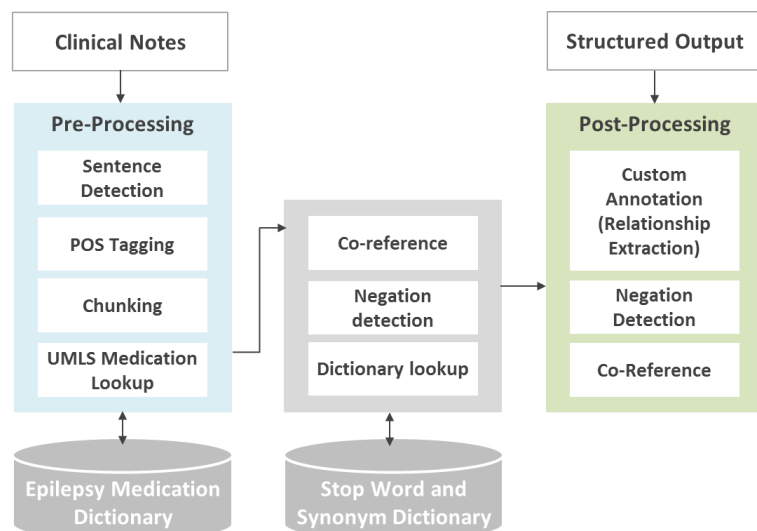
Case Study

Clinical Notes Analysis using NLP

Client Requirements

Client is a US based drug manufacturer. For its pharmacovigilance initiative, client wanted to analyze information about its drugs in clinical notes using Natural Language Processing (NLP). Given our expertise in clinical analytics and open-source tools, CitiusTech built an automated solution to analyze the data to identify if patients were currently on any anti-epileptic drugs for controlling seizures, and to recognize reasons for discontinuation.

Solution Schematic



CitiusTech Solution:

- Consolidated the understanding of NLP core concepts with libraries like Apache cTAKES, Apache OpenNLP and UIMA framework
- Identified language semantics and patterns for NLP training data
- Identified algorithm and cTAKES modules to achieve expected outcome - chunking and stemming, UMLS and dictionary lookup, relation extractor and negation detection
- Developed regression test cases to validate accuracy

Value Delivered

- Developed an automated solution to analyze clinical notes
- Developed extensible framework to host future NLP requirements
- Exceeded accuracy benchmark
- Automated regression testing and accuracy reporting

All product and company names mentioned herein are trademarks of their respective owners.

About CitiusTech

CitiusTech is a provider of healthcare technology services and solutions to medical technology companies, providers, payers and life sciences organizations, with over 2,500 professionals worldwide and serving over 75 healthcare organizations globally. CitiusTech's services and solutions include healthcare software development, healthcare interoperability, regulatory compliance, BI/analytics, consumer engagement, care coordination and population health management. CitiusTech helps customers accelerate innovation in healthcare through a number of solutions and accelerators for clinical quality reporting, healthcare big data, cloud computing, mobile health and predictive analytics. With cutting-edge technology expertise, world-class service quality and a global resource base, CitiusTech consistently delivers best-in-class solutions and an unmatched cost advantage to healthcare clients worldwide.