



# Integrating Web Services into Biomedical Text Mining

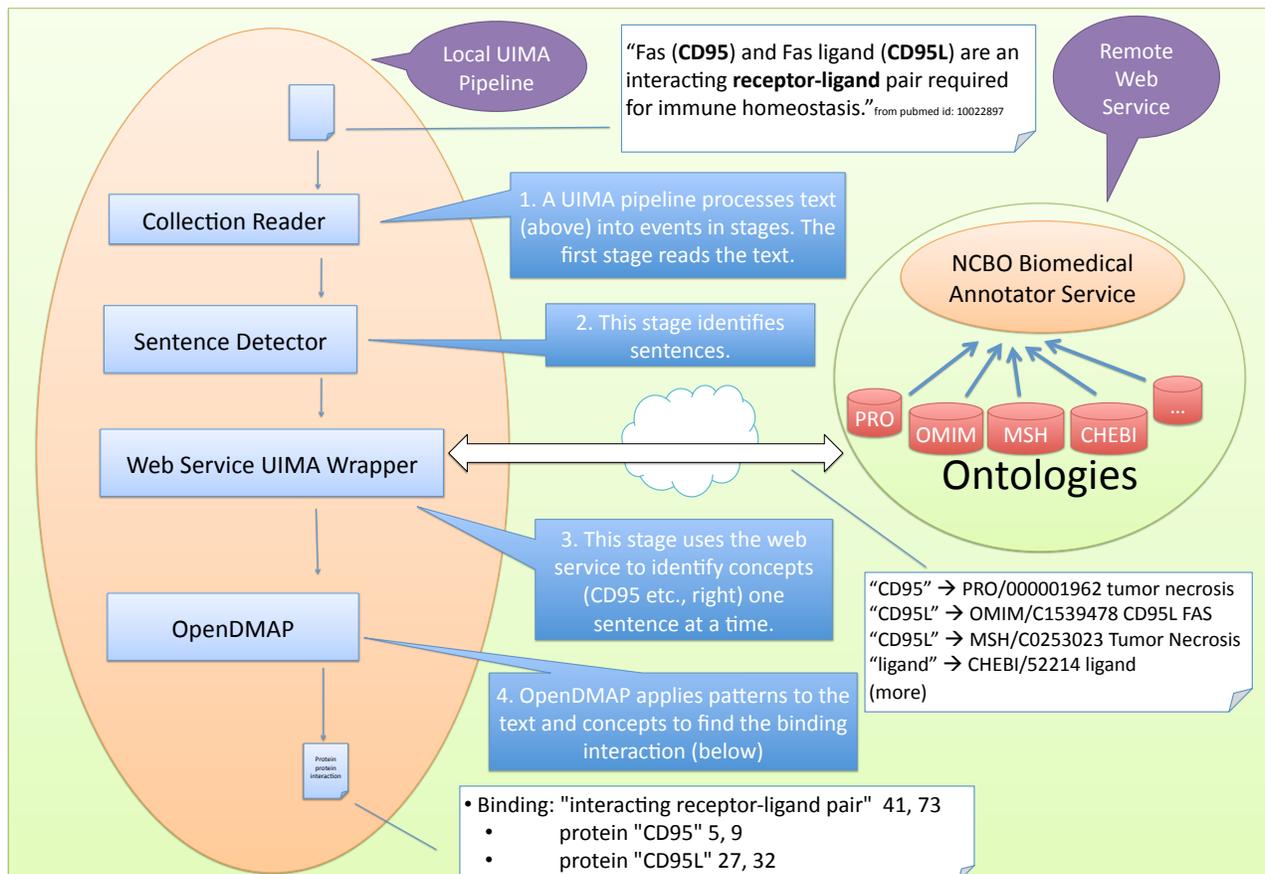
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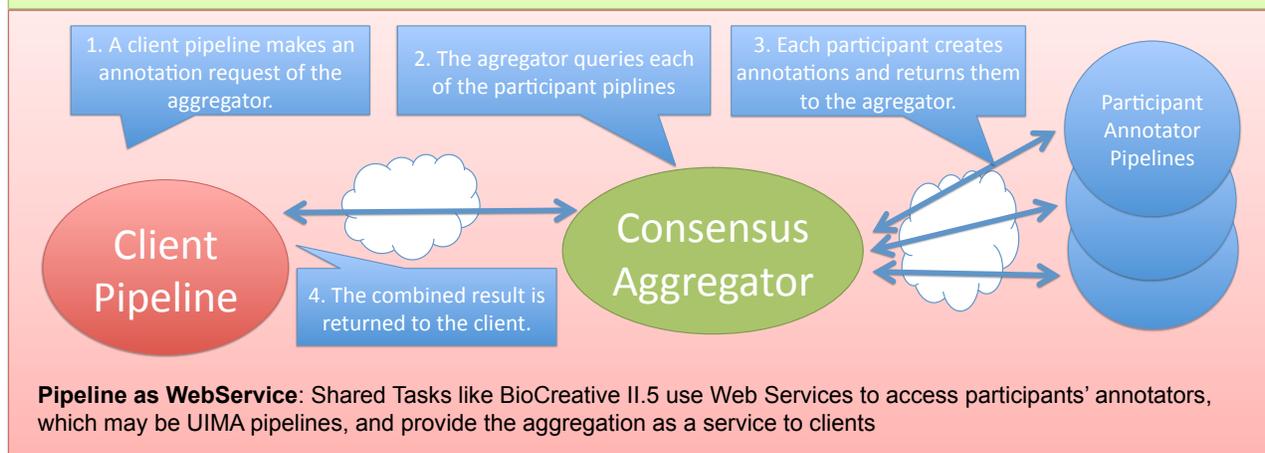
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Ease of installation, platform independence and interoperability have been key factors in the adoption of some of the most widely used biomedical text mining tools. Coincident with the maturation of the Semantic Web has been the increasing availability of biomedical text mining web services, which inherently need no installation and are platform-independent. In terms of interoperability, the Apache Unstructured Information Management Architecture (UIMA) standard has taken interoperability to new heights. We have adapted a number of text mining tools into UIMA including the NCBO's Biomedical Annotator Service. The annotator service recognizes biomedical ontology concepts in text and returns annotations indicating the location of all matched concepts. Leveraging the integration efforts of the NCBO, this service hides the efforts of installation, mapping and maintenance of over 100 ontologies. This poster describes our efforts to integrate web services in general, and the annotator in particular, into our text mining infrastructure using UIMA.



**UIMA Pipeline Using Web Service:** The NCBO Biomedical Annotator Service, a web service, is adapted to and used from within a UIMA processing pipeline that identifies protein-protein interactions.



**Pipeline as WebService:** Shared Tasks like BioCreative II.5 use Web Services to access participants' annotators, which may be UIMA pipelines, and provide the aggregation as a service to clients