

emtelligent[®] for Accelerated Innovation

Fast, Simple Integration of Advanced NLP for Medical Applications

Powered by deep learning, emtelligent's emtelliPro[™] Medical Language Understanding engine and emtelliSuite[™] developer apps are designed to reveal key insights buried within unstructured medical text (e.g. EMR data, diagnostic orders and reports, clinical notes, etc). By seamlessly integrating with a wide variety of clinical applications, emtelliPro enables automatic analysis and codification of patient and population records that improve quality reporting, maximize reimbursements, and drive clinical research initiatives.

Unlock Deeper Clinical Insights with the emtelliPro Medical Language Understanding engine

Designed by medical and data science experts for medical applications, emtelliPro can extend your product's medical data collection, analysis, and understanding capabilities.



- Collect and analyze new and historic data across patient charts and clinical systems in real-time to build multidisciplinary datasets of patients, procedures, and diagnoses



- Proactively highlight and prioritize abnormal terms, actionable diagnoses, follow-up recommendations, and incidental findings from within diagnostic reports to accelerate time to diagnosis and treatment and reduce the number of patients who are 'lost to follow-up'



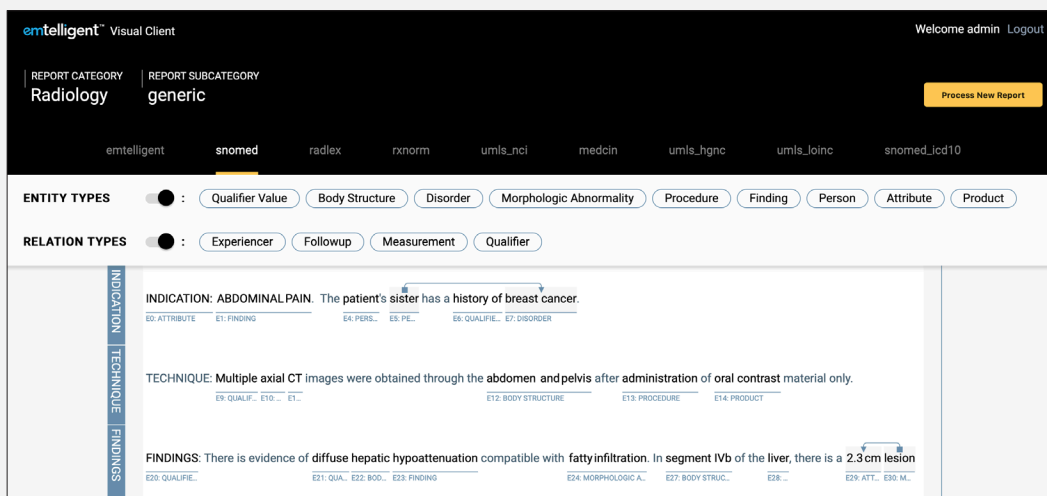
- Automatically extract and codify medical terms using standard or custom ontologies (e.g. ICD-10, SNOMED, RxNorm, RadLex, MEDCIN, and others)

Enable AI Deployment & Performance Monitoring

emteLLiPro includes visualization and monitoring tools that enable real-time tracking of AI findings and performance and accuracy KPIs.

- Enable automatic comparison of AI findings to radiologist reports to identify discrepancies and quantify performance
- Accurately compare AI model accuracy to aid in evaluation, performance monitoring, and continuous improvement initiatives
- Use NLP to identify imaging studies for AI model training data
- Shorten sales cycles by automating the collection and quantification of business case ROI metrics

emteLLiPro Visual Client



The emteLLiPro Visual Client provides a graphical view of NLP output for individual reports, helping developers to better understand the entities, assertions, and relations identified during processing

Fast, Seamless Integration

Enhance integrations and custom development projects with emteLLiPro's powerful NLP engine that includes extensible APIs and SDKs to extend the capabilities of the EMR and other clinical applications.

- Leverage multiple SDKs including Python and Java to readily support integration with apps and existing systems
- Quickly and seamlessly integrate with customer production environments using standards-based (HL7, SQL) integration methods and retrieve structured data from a highly normalized SQL-based database, or use emteLLiPro API output directly for real-time applications
- Harmonize, compare, and analyze data from multiple sources, systems, and vendors including EHR, RIS, PACS, CVIS, VNA, LIS, reports stored in databases, text files, PDFs, or other custom formats

Powered by Next Generation Technology

emteLLiPro's Medical Language Understanding Engine leverages advanced NLP and deep learning algorithms to automatically identify, extract, and correlate data from multi-disciplinary clinical systems to unlock insights hidden within discrete and narrative data elements.

Under the Hood



- emteLLiPro's deep learning models automatically mine structured and unstructured (narrative) text from within medical orders, EMR data, and diagnostic reports to automatically extract and codify medical entities using standard and custom ontologies



- Advanced feature extraction identifies report sentences, segments, experiencers, negation, uncertainty, measurements, time expressions, and higher-level features such as follow-up recommendations to create a comprehensive, searchable database of clinical findings



- APIs and SDKs are available in Python, Java, and other languages, and custom clients can be easily created to support advanced integrations or custom app development



- A highly normalized, SQL-based database simplifies the development of business intelligence and custom apps. An ORM supports numerous commonly used RDBMSs



- Flexible cloud-based or on-premise deployment models to fit your customer's security requirements



- Highly scalable and performant, able to process millions of reports daily on a single server instance

Simplify NLP Integration with Comprehensive Data Visualization & Development Tools

The emteLLiSuite platform provides a diverse collection of tools and sample code* to simplify and accelerate integration with the emteLLiPro NLP engine, allowing technology partners to easily augment and extend the capabilities of the EMR and other clinical applications.

emteLLiSuite Smart Summary App

Smart Summary				Patient ID: 11111111				Search			
Abnormalities / Disorders				Neoplasia / Cancer				Injuries / Trauma			
Concept	Date	Document		Concept	Date	Document		Concept	Date	Document	
Serousitis	2142-08-30	Discharge Summary		Cervical intraepithelial neoplasia grade 1	2142-03-31	Discharge Summary		Drug overdose	2142-02-28	Discharge Summary	
Respiratory failure	2142-08-30	Discharge Summary		Hemangioma of liver	2141-12-08	CT ABDOMEN W/CONTRAST		Bite	2142-01-12	Discharge Summary	
Cardiorespiratory arrest	2142-08-30	Discharge Summary		Solitary nodule of lung	2141-11-16	CTA CHEST W/ISO C&RECONS, NON-CORONARY		Hypothermia caused by exposure	2141-09-24	Discharge Summary	
Electromechanical dissociation	2142-08-30	Discharge Summary		Cervical intraepithelial neoplasia grade 2	2141-06-06	Discharge Summary		Hemstring injury	2141-09-08	Discharge Summary	
Pulmonic valve regurgitation	2142-08-30	Discharge Summary		Ped	2140-05-02	Discharge Summary		Injury of muscle	2140-09-08	Discharge Summary	
Venous occlusion	2142-07-12	CTA CHEST W/ISO C&RECONS, NON-CORONARY		Neoplastic disease	2139-10-08	CT PELVIS W/CONTRAST		Damage	2140-09-02	Discharge Summary	
Deformity	2142-08-30	Discharge Summary			2139-11-02			Muscle strain	2137-11-21	Discharge Summary	
Findings / Symptoms				Mental / Behavioral Disorders				Procedures / Care Activities			
Concept	Date	Document		Concept	Date	Document		Concept	Date	Document	
Inspired oxygen concentration	2142-08-30	Discharge Summary		Opioid withdrawal	2142-02-17	Discharge Summary		Resuscitation	2142-08-30	Discharge Summary	
Orthopnea	2142-08-30	Discharge Summary		Depressive disorder	2142-01-12	Discharge Summary		Emotional support	2142-08-30	Discharge Summary	
For resuscitation	2142-08-30	Discharge Summary		Panic attack	2141-11-23	Discharge Summary		Deep palpation	2142-08-16	Discharge Summary	
Respiratory crackles	2142-08-30	Discharge Summary		Narcosis	2141-09-24	Discharge Summary		Procedure related to management of drug administration	2142-08-16	Discharge Summary	
Dyspnea on exertion	2142-08-30	Discharge Summary		Stress	2141-09-24	Discharge Summary		Discussion	2142-07-23	Discharge Summary	
Qualifier value	2142-08-16	Discharge Summary		Altered mental status	2140-04-29	CT ORBIT, SELLA & IAC W/O CONTRAST		Centesis	2142-07-16	PARACENTESIS DIAG. OR THERAPEUTIC	
Inguinal pain	2142-08-16	Discharge Summary		Claustrophobia	2139-10-02	MRI CHEST/MEDIASTINUM W/CONTRAST		Puncture and aspiration of abdomen using ultrasonographic guidance	2142-07-16	PARACENTESIS DIAG. OR THERAPEUTIC	

- Smart Summary showcases how emteLLiPro can identify relevant diagnoses from within the patient's clinical history and documents and present them in an easy-to-read format for fast understanding by clinical users

- **emtelliSearch™** demonstrates how emtelliPro can intelligently search for diagnoses, conditions, and procedures in a patient’s chart, no matter how large or detailed
- **Hierarchical Search** shows how emtelliPro leverages the power of the SNOMED hierarchy to be able to identify hundreds or thousands of related diagnoses with a single query
- **Trainee Scoreboard** illustrates how emtelliPro can be used to create an at-a-glance dashboard view of resident reading progress and gaps according to defined targets
- **Follow-Up Detector** highlights how emtelliPro can automatically flag actionable recommendations or incidental findings from within diagnostic reports to ensure timely adherence and follow-up

emtelliSuite Follow-up Detector

	DATE	PATIENT ID	DOCUMENT TYPE	SENTENCE	REASON	PROCEDURE	TIMEFRAME
8	2019-09-02	998399	Radiology: CT	Followup CT in 2-16 months to document resolution is recommended and to exclude either a chronic infection or coexisting bronchoalveolar cell carcinoma.	carcinoma, infection	CT	2-16 months
9	2018-11-27	755279	Radiology: CT	In absence of known primary malignancy, recommend three month followup CT scan to confirm stability.	malignancy	scan	three month
10	2019-04-03	159445	Radiology: CT	As the patient is high risk, with a prior primary malignancy and emphysema, follow- up chest CT in 6 months is recommended, alternatively a PET/CT may be performed.	emphysema, malignancy	chest CT	6 months
11	2019-08-26	745112	Radiology: CT	Given patient's high- risk status of emphysema, a CT chest in 3 months after drainage of right pleural effusion is recommended for further evaluation.	emphysema, pleural effusion	CT chest	3 months after
12	2019-08-29	699799	Radiology: CT	3. Stable nodules including a 7-mm nodule that requires a one-year followup examination in 2815-4-27 to confirm two years' stability.	nodule, nodules	examination	one-year

The emtelliSuite Follow-up Detector demonstrates how emtelliPro can identify follow-up recommendations or incidental findings from within diagnostic reports and create a summarized view to aid in tracking and prevent 'lost to follow-up' events

To learn more about the emtelliSuite collection of clinical workflow and quality tools visit our website: www.emtelligent.com or contact us at info@emtelligent.com.

**Make the
emtelligent
Choice**

emtelligent’s advanced NLP engine transforms difficult-to-use, narrative medical text into valuable and actionable insights.

Enable innovation. Improve competitiveness.
Drive performance.