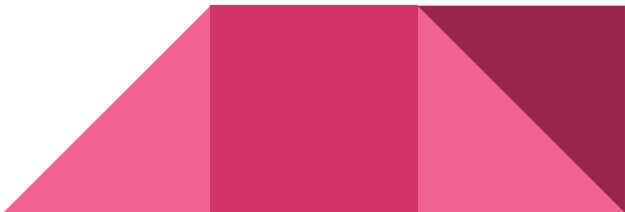


NLP in Public Safety

John Mikos

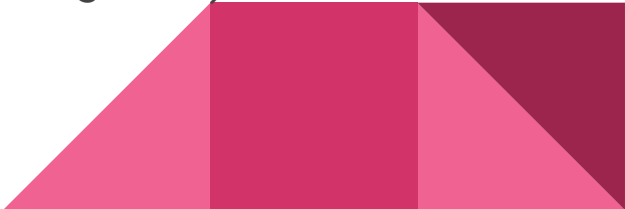
What is Public Safety?

According to Wikipedia, a **department of Public Safety** is a state or local government agency which often has a broad portfolio of responsibilities, which may include some or all of the following:

- Police Services
 - Firefighting Services
 - Ambulance and Emergency Medical Services
 - Haz-Mat Services
 - Emergency Communications (9-1-1)
 - Inspections and Code Enforcement
 - Animal Control
 - Department of Transportation
 - Department of Motor Vehicles
- 

Issues within Public Safety

When you think of public safety services, there are many places to improve. Efficiency is key to improving the safety of people, so we should look to improve any methods that may have become outdated due to coming of NLP/ML. Here are some of the inefficiencies being addressed now:


- Voice-activated license plate lookups and identity verifications (police)
 - Identifying all parties accountable in fraud cases (police)
 - Voice populating incident reports in real time (dispatchers)
 - Path Planning and navigation in Fire Fighter teams (firefighters)
- 

Improvement in Police Services

"Police officers spend up to 39% of their time on tedious paperwork. This distracts officers from their critical police work, or ties up the radio with non-essential traffic."

- GreenKey Technologies

It is important for police to focus on the job at hand and not worry about paperwork. By using NLP, the paperwork for police officers can be reduced by automatically highlighting police codes, addresses, critical dangers, etc. from spoken conversations. Additionally, NLP can improve officer safety by eliminating typing with voice-activated license plate lookups and identity verification.

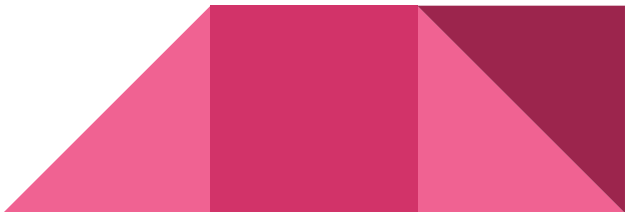


Improvement in Police Services (continued)

White Collar Crimes (Fraud Investigation)

In white-collar crimes, mainly in cases of fraud, the data is unstructured and from a variety of sources (computer images, servers, internal communications, wiretap data, databases, etc.). Researchers from the University College of Dublin have been able to improve data processing time and improve data analysis time.

It implements the NLP techniques of information extraction, named entity recognition, and relationship extraction.



Improvement in Emergency Communications

When you call 9-1-1, the message has to be transcribed and relayed by someone before police, fire, or ambulance services know where and what to do.


To speed up the process, companies are looking to voice populate incident reports in real time. This will enable police and firefighters to respond quickly to time sensitive emergency situations.



Improvement in Firefighting Services

Firefighters currently carry specified equipment such as thermal cameras, gas sensors, and microphones. Keeping up with all of this equipment can become cumbersome so new methods are improving real time decision making and minimizing errors in judgement.

Additionally, this equipment does not directly help the victim. With the combination of Machine Learning and Natural Language Processing, new methods are being developed in an attempt to infer human recognition and detect a person's posture in order to detect victim's health level in order to prioritize them by need and relay the information to the firefighter.



Conclusion

In conclusion, Natural Language Processing would incredibly streamline important, but mundane, tasks. It seems that almost all public safety departments/services can benefit from the implementation of NLP since all work with the public. A lot of information is needed to interact with the people in need of help. NLP proves promising in improving the safety of citizens due to its impact in public safety.



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Thank You