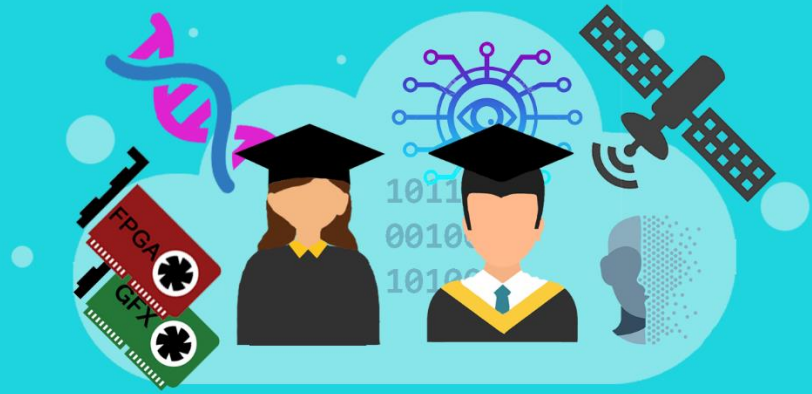


Diploma Thesis

Microprocessors and
Digital Systems
Laboratory



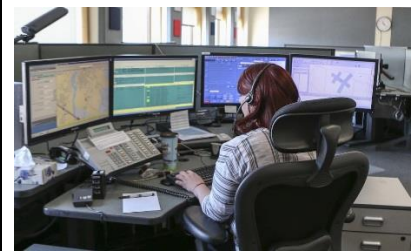
Human-as-Sensor: Enhancing the Situation Awareness of First Responders through Social Media

Social media are a valuable source of information during emergency situations, such as wildfires, earthquakes and terrorist attacks. First responders and rescue teams (e.g. fire departments, hospitals) are able to act more effectively when obtaining information not only collected through traditional means (such as emergency communication services-112), but also through social media posts made by the public.

This diploma thesis will develop methodologies and tools, enabled by machine learning techniques, to assist First Responders during emergency situations. The tools will effectively deliver to First Responders useful information identified in social media during emergencies. In particular, the thesis will address the following challenges:

- How to detect information useful to First Responders in social media? How to prioritize this information?
- How to discard malicious, misleading and non-informative posts?

This diploma thesis will be actively supported by the following First Responders: Lyon and Valencia Fire Departments, University Hospital of Valencia, Croatian Rescue Services.



TOOLS, LIBRARIES AND INFRASTRUCTURES:

- Computing infrastructures for training and testing machine learning models
- Tensorflow, Docker, Twitter API, Facebook API
- Publicly available datasets of social media posts during emergency situations

PREREQUISITES:

- Machine learning
- C/C++, Python programming

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