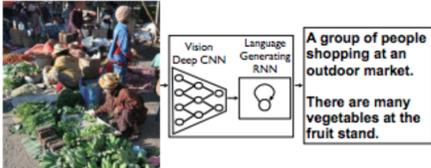
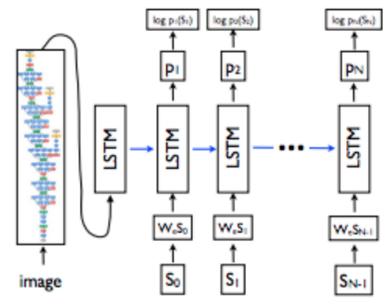
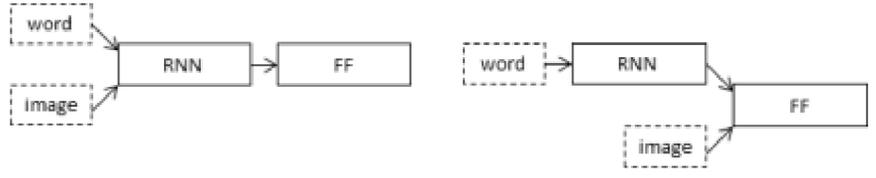


# 7a.010.UL - Event Detection and Classification from Live Video Streams

Khalid Elgazzar<sup>1</sup>, Anthony S Maida<sup>1</sup>, Twisampati Sarkar<sup>1</sup>, Bhaskar Ghosh<sup>1</sup>, Sumit Shah<sup>2</sup>  
 University of Louisiana at Lafayette <sup>1</sup>, CDG<sup>2</sup>

Project Start: 8/1/2018				End Date: 7/30/2018				Project Budget: \$20K				Spent: \$15K			
<p><b>Project Summary:</b>                      Smart IoT infrastructures continuously monitor the environment and collect real-time data to support intelligent decision making. Much of the collected data are video and audio streams that can be leveraged to automatically characterize the environments through event detection and classification.</p> <p>Imagine a scenario where a traffic incident is first detected through sound sensors (e.g., strong bang sound), and approximately localized by the sound-sensor array (observation phase). This low-level sensor information will draw the attention of the co-located cameras to adjust their orientation and focus on the area of the interest (orientation phase). This is enabled by high level processing algorithms running on the edge that will evaluate whether an unusual situation occurs. The system can even allocate more nearby resources to collecting additional information (stretched observation phase). Such fine-granularity data is forwarded to a central processing unit that implements advanced, evolving and redundant machine learning techniques to classify the situation (for instance traffic accident, or commission of a crime). The system then performs semantic reasoning and makes a action decision action phase</p>								<p><b>Image Description</b></p>  <p><b>Brief Overview</b></p>  <p><b>Two different Architectures</b></p>  <p>Source – Vinyals et al(2017), Tanti et al(2016)</p>							
<b>PROJECT DELIVERABLES</b>															
Deliverable				Achievements				Remaining To Do							
1. Data preprocessing and cleaning algorithms.				95% complete				Refine data preprocessing.							
2. Event Classification and Learning Techniques				Research on architectures and implementation of the RNN architectures (50% complete)				Train LSTM on video datasets, evaluate the descriptions generated with Rouge and Meteor scores.							
3. Fully-functional proof-of-concept prototype to demonstrate the feasibility and usability of the proposed technology				Planned before May, 2019				100%							