

AFRL RESEARCH TOPIC CALL 2009

Research Title: Scene Characterization for Event-based Novel Exploitation (SCENE)

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Academic Area/Field and Education Level: Electrical Engineering, Computer Science, (BS/MS)

Objectives: Propose and evaluate a set of attributes to characterize simple activity in a scenario as depicted in Wide Area Motion Imagery. Attributes will form a basis for a scene description language for event-oriented scene indexing.

Description: We ultimately seek a video scene indexing capability to support rapid exploitation of archived video. For the present effort, we desire a set of scene-describing attributes, machine-extractable from ~1Hz Wide Area Motion Imagery (WAMI) video sequences. The attributes will permit the construction of generic macro descriptions of the initiation/progress/termination of an event or event sequence. For example, being able to discern attributes such as “continuous linear flow of objects”, “objects flowing into an area”; or “linear queuing of objects” could enable scene characterizations such as “traffic on road”, “filling parking lot”, and “line of people forming”, respectively. Desire a demonstration of machine extraction of scenes exhibiting researcher’s proposed basic event attributes. Results from ongoing DARPA programs VIRAT and PerSEAS are a recommended starting point for this work. AFRL can provide WAMI data.

Research Classification/Restrictions: This research can be unclassified, FOUO, or classified, depending on the clearance of the researcher. Unclassified research results may be FOUO and subject to ITAR restrictions.

Type of Student Desired:

Can scale/scope work to advanced undergraduate or graduate level.

Eligible Research Institutions: *Place an X in all that apply.*

Universities (DAGSI & AFIT) AFIT (only) USAFA