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LEADING INTELLIGENCE INTEGRATION

Aggregative Contingent Estimation (ACE)

"The goal of the ACE Program is to dramatically enhance the accuracy, precision, and timeliness of intelligence forecasts for a broad range of event types, through the development of advanced techniques that elicit, weight, and combine the judgments of many intelligence analysts.

The ACE Program seeks technical innovations in the following areas: (a) efficient elicitation of probabilistic judgments, including conditional probabilities for contingent events; (b) mathematical aggregation of judgments by many individuals, based on factors that may include: past performance, expertise, cognitive style, metaknowledge, and other attributes predictive of accuracy; and (c) effective representation of aggregated probabilistic forecasts and their distributions. The ACE Program will build upon technical achievements of past research and on state-of-the-art systems used today for generating probabilistic forecasts from widely-dispersed experts. The program will involve empirical testing of forecasting accuracy against real events."

Source: http://www.iarpa.gov/solicitations_ace.html

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Automated Low-Level Analysis and Description of Diverse Intelligence Video (ALADDIN)

"Massive numbers of video clips are generated daily on many types of consumer electronics and uploaded to the Internet. In contrast to videos that are produced for broadcast or from planned surveillance, the "unconstrained" video clips produced by anyone who has a digital camera present a significant challenge for manual as well as automated analysis.

The ALADDIN Program seeks to combine the state-of-the art in video extraction, audio extraction, knowledge representation, and search technologies in a revolutionary way to create fast, accurate, robust, and extensible technology that supports the multimedia analytic needs of the future."

Source: http://www.iarpa.gov/solicitations_aladdin.html

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Babel

" The goal of the Babel Program is to develop methods to build speech recognition technology for a much larger set of languages than has hitherto been addressed. The Program will require innovations in how to rapidly model a novel language with significantly less training data that are also much noisier and more heterogeneous than what has been used in the current state-of-the-art. Babel's technical measures of success are focused on how well the generated model works to support effective word-based search of noisy channel speech in the languages to be investigated. The new methods will be systematized so that they can be applied rapidly to a novel underserved language."

Source: http://www.iarpa.gov/solicitations_babel.html

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Finder

".. some imagery does not have a geolocation tag and it is important to know the location of the camera or image, and hence objects in the scene ..

The Finder Program aims to build on existing research systems to develop technology that augments the analyst's expertise to address the geolocation task. Required technical innovations include 1) efficient and effective use of analyst time and knowledge, 2) effective use of a wide variety of data sources, 3) fusion of diverse publicly available imperfect reference data, and 4) expansion of automated geolocation technologies to work efficiently and accurately over all terrain and large search areas. If successful, Finder will deliver rigorously tested technology capable of addressing the geolocation task for images and video anywhere on the land surface of the earth."

Source: http://www.iarpa.gov/solicitations_finder.html

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Foresight and Understanding from Scientific Exposition (FUSE)

"The globalization of science and technology (S&T) means that technical capabilities can emerge from diverse technical areas anywhere in the world. The FUSE Program will explore theories and models for the detection of significant technical capability emergence that can be observed from the worldwide scientific, technical, and patent literatures. FUSE will develop and test quantitative techniques that scan the full-length technical text across a large number of documents for time-dependent, pattern-based signals within a wide range of technical areas and multiple human languages. The Program will include empirical testing against examples of real-world capability emergence."

Source: http://www.iarpa.gov/solicitations_fuse.html

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Integrated Cognitive-Neuroscience Architectures for Understanding Sensemaking (ICArUS)

"The goal of the ICArUS Program is to construct integrated computational cognitive neuroscience models of human sensemaking. By shedding light on the fundamental mechanisms of sensemaking, ICArUS models will enable the Intelligence Community to better predict human-related strengths and failure modes in the intelligence analysis process and will point to new strategies for enhancing analytic tools and methods. Furthermore, ICArUS models may serve to help define a platform for a new generation of automated analysis tools."

Source: http://www.iarpa.gov/solicitations_icarus.html

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Knowledge Discovery and Dissemination (KDD)

"The focus of the KDD program is to develop novel approaches that will enable the intelligence analyst to effectively derive actionable intelligence from multiple, large, disparate sources of information, to include newly available data sets previously unknown to the analyst."

Source: http://www.iarpa.gov/solicitations_kdd.html

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Metaphor

"The Metaphor Program seeks to provide a novel source of deep insights into human cultures via analysis of how language is used. The perspectives shared within a culture play a significant role in determining how the people who comprise that culture view and respond to events. These perspectives are not necessarily explicitly referenced within the culture and the people of the culture may not even be consciously aware of them. In order for an analyst to accurately interpret the actions of people who belong to another culture, he needs to understand the shared perspectives of that culture and also of his own culture. To acquire the requisite level of understanding normally requires substantive personal interactions over an extended period of time."

Source: http://www.iarpa.gov/solicitations_metaphor.html

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Open Source Indicators (OSI)

"The OSI Program seeks to develop methods for continuous, automated analysis of publicly available data in order to anticipate and/or detect societal disruptions, such as political crises, disease outbreaks, economic instability, resource shortages, and natural disasters. The Program will aim to develop methods that 'beat the news' by fusing early indicators of events from multiple data sources and types."

Source: http://www.iarpa.gov/solicitations_osi.html

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Security and Privacy Assurance Research (SPAR)

"The goal of the SPAR program is to develop and demonstrate practical techniques for exchanging data that protect the security and privacy interests of each party. For example, a database server must not learn what information was requested by a client, and yet still have the assurance that the client was authorized to have the information that was sent. Prototype systems will implement protocols that are demonstrably efficient and provide a range of security and privacy assurances relevant to a chosen data exchange scenario."

Source: http://www.iarpa.gov/solicitations_spar.html

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Synthetic Holographic Observation (SHO)

"The SHO Program goals are derived from the state-of-art in potential component technologies (e.g., light sources, optical materials, Hogel-based rendering engines) and also from the human factors challenges faced by analysts who work for long periods with massive and naturally 3D data. The SHO Program plans to create low profile, brilliant, power-efficient, high resolution and full color synthetic holographic 3D display systems that present dynamic 3D data with no flicker, no color break-up, and in a manner that is simultaneously viewable by multiple analysts with the unaided eye. Human factors will be addressed throughout the program to enable sustained viewing that is natural to the senses without discomfort. Further, we anticipate the creation of powerful new software applications for analysts as the ability to work naturally in 3D removes many of the cognitive inefficiencies of today's systems."

Source: http://www.iarpa.gov/solicitations_sho.html