Opportunity Title: Develop Deep Neural Network Models to Identify Specific
Visual Patterns for Real Time Decisions
Opportunity Reference Code: IC-17-07

Organization	Office of the Director of National Intelligence (ODNI)
Reference Code	IC-17-07

How to Apply

Create and release your Profile on Zintellect – Postdoctoral applicants must create an account and complete a profile in the on-line application system. **Please note: your resume/CV may not exceed 2 pages.**

Complete your application – Enter the rest of the information required for the IC Postdoc Program Research Opportunity. The application itself contains detailed instructions for each one of these components: availability, citizenship, transcripts, dissertation abstract, publication and presentation plan, and information about your Research Advisor co-applicant.

Application Deadline 3/31/2017 11:59:00 PM Eastern Time Zone

Description

Research Topic Description, including Problem Statement:

Deep learning methods have been developed and used for object detection and audio analysis in recorded data. The computational burden of these methods has limited where these analyses can be performed.

However, local data processing has reached a price point where it is now more economical to download analytical results on small form factor processing units. This opens the door for processing to happen in real-time. Mobile or stationary cameras can collect data to assist in decision making for a variety of situations. Now it is a question of making that processing faster and more accurate to increase certainly in decision-making.
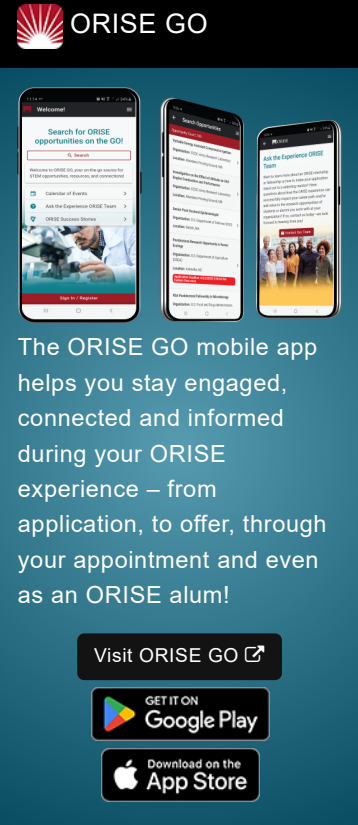
Example Approaches:

Research proposals could consider the variety of scenarios while considering the volume of data that exists. How can real-time or near real-time deep-learning techniques assist with faster and more reliable analysis for decision making? Are these techniques adaptable enough to address variety in object size or composition as well as mobility?

Successful proposals could consider ways to make the most of the benefits of neural networks, such as:

- Designed to recognize patterns
- Interpret sensory data through a kind of machine perception, labeling or clustering raw input
- Numerical pattern recognition, contained in vectors, into which all real-world data, be it images, sound, text or time series, must be translated
- Image recognition
- Speech recognition and natural language processing

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
    - **Business** (11 👁)

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- **Chemistry and Materials Sciences** (12 👁)
- **Communications and Graphics Design** (6 👁)
- **Computer, Information, and Data Sciences** (16 👁)
- **Earth and Geosciences** (21 👁)
- **Engineering** (27 👁)
- **Environmental and Marine Sciences** (14 👁)
- **Life Health and Medical Sciences** (45 👁)
- **Mathematics and Statistics** (10 👁)
- **Other Non-Science & Engineering** (13 👁)
- **Physics** (16 👁)
- **Science & Engineering-related** (1 👁)
- **Social and Behavioral Sciences** (28 👁)