Opportunity Title: Holistic Human Identity Mapping
Opportunity Reference Code: ICPD-2021-01

Organization	Office of the Director of National Intelligence (ODNI)
Reference Code	ICPD-2021-01
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.

Additional information about the IC Postdoctoral Research Fellowship Program is available on the program website located at: https://orise.orau.gov/icpostdoc/index.html.

If you have questions, send an email to ICPostdoc@orau.org. Please include the reference code for this opportunity in your email.

Application Deadline	2/26/2021 6:00:00 PM Eastern Time Zone
Description	**Research Topic Description, including Problem Statement:**

Understanding human behavior and the drivers behind it are of key importance in numerous fields. Unfortunately, human behavior is more complex than simple decision making models imply. Behavior is influenced by based personality traits, historical influences and experiences, situational dependent information and external influences, and a small amount of randomness. In the past research has focused on decision mapping, modeling on single streams of information, and eigenbehaviors. These approaches fail to account for contextual information and fail to fuse together multiple available data streams. In order to appropriately map and understand an individual's unique psychological makeup we seek methods that broaden the focus using multimodal data (i.e. location information, audio cues, body language information, textual correspondence, etc.) to provide a psychological correlation of the individual.

Example Approaches:

There are numerous possible approaches in a field that has had little change in recent years. First, it is possible now with new tensor decomposition methods like PARAFAC, Tucker, etc. to expand on the method described by Pentland et al. in their eigenbehaviors paper to include additional data sources in a more dense n-dim representation of activity with time. Second, often time different modeling methods are better suited to a particular data type. These disparate modeling techniques can be combined using ensemble techniques to generate a single model. Both of these possibilities can and should be explored.

Relevance to the Intelligence Community:

It is incumbent upon the Intelligence Community (IC) to understand human behaviors at their deepest levels because these behaviors drive every aspect of human interaction. While the IC is interested in country scale behavioral dynamics, we also seek to better understand the subject level behaviors that inform and drive those higher-level dynamics. This research seeks to resolve that gap in two ways. First, it will explore methodologies for benefiting from the additional information other modalities provide. Second, it will explore generalization of these methodologies to enable rapid incorporation of new data sources in the future. This work will take a step toward

Opportunity Title: Holistic Human Identity Mapping
Opportunity Reference Code: ICPD-2021-01

resolving/informing future research and development.

Key Words: Eigenbehaviors, Eigen-Decomposition, Tensor-Decomposition, Psychological Traits, Behavioral Modeling

Qualifications

Postdoc Eligibility

- U.S. citizens only
- Ph.D. in a relevant field must be completed before beginning the appointment and within five years of the application deadline
- Proposal must be associated with an accredited U.S. university, college, or U.S. government laboratory
- Eligible candidates may only receive one award from the IC Postdoctoral Research Fellowship Program

Research Advisor Eligibility

- Must be an employee of an accredited U.S. university, college or U.S. government laboratory
- Are not required to be U.S. citizens

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Communications and Graphics Design** (2 👁)
  - **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** (2 👁)
  - **Physics** (16 👁)
  - **Science & Engineering-related** (1 👁)
  - **Social and Behavioral Sciences** (27 👁)