

Opportunity Title: Human Language Technology-Enabled Personality

Assessments

Opportunity Reference Code: IC-16-12

Organization Office of the Director of National Intelligence (ODNI)

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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 4/15/2016 6:00:00 PM Eastern Time Zone

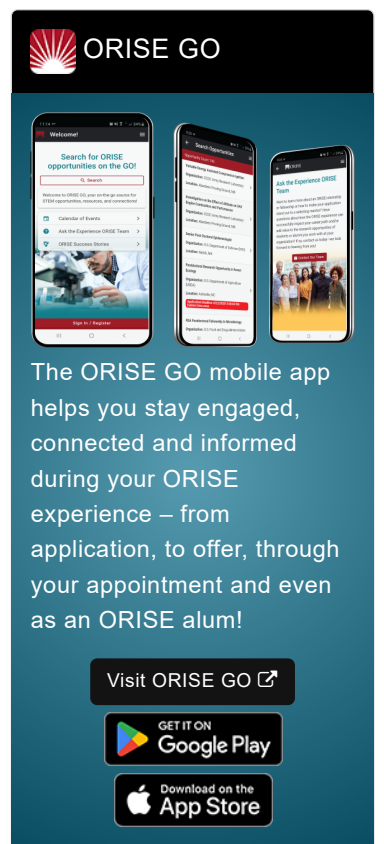
Description There is a growing body of evidence that patterns in natural and written language is tightly coupled to one's personality traits (Cohen, Minor, Baille, & Dahir, 2008; Hirsh & Peterson, 2009 to name a few). Linguistic differences such as word usage (e.g., pronouns) and language style have been significantly correlated with social behaviors and psychological states (Pennebaker & Chung, Ireland, Gonzales, & Booth, 2007). Online social networking provides a rich and massive source of natural language use. However, rapidly exploiting this unique dataset for high-value information and meaningful intelligence is highly problematic due to the inherent properties of big data – the volume, veracity, variety, and velocity of much of the raw data. Add further components such as foreign language, translation and interpretation, and limited manpower and it becomes quickly apparent that brute-force, manual methods are inadequate. Fortunately, Human Language Technology (HLT) and natural language processing (NLP) tools for social media data processing are plenty (e.g., sentiment analysis), yet the novel application of these algorithms to understanding individual differences in personality has only been recently addressed. Important, fundamental research questions remain open: Can we independently assess individual differences (beyond psychological traits) in psychological well-being, attitudes, and beliefs via social media language? Can we use social media language to track psychological trends over time and space to predict real-world behavior? Are there unique, cross-cultural differences in language use on online social networks? Here we seek proposals to further address these questions.

The principle aim of this research is to advance the scientific and technical progress in language-based personality and behavioral profiles.

Example Approaches


In general, the research may be focused on the theoretical or experimental aspects of language based personality and behavioral assessment.


The proposal could address one or more of the following research objectives:




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- Development of theory and methods to use language analysis to predict both psychological characteristics and objective behavioral outcomes, such as moving to a new location, changes in relationship status, joining or leaving groups, purchasing behavior, joining in collective action, etc.
- Development of theory and methods to automatically identify the context of language within social media. For example, are interactions formal, among friends, do they reflect humor, etc?
- Development of theory and methods to automatically identify group or societal trends that may differ by age, sex, social class, or other feature that may be unique to particular cultures.
- Development of theory and methods to reveal spatiotemporal patterns of psychological states
- Development of metrics on the effectiveness of predictive models of individual and regional differences in personality and psychological characteristics
- Development of metrics on the effectiveness of new or established methods of language-based assessment, including an evaluation of the validity and reliability of the model.

**Eligibility
Requirements**

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