

Opportunity Title: Impact and Mitigation of Cognitive Limits on Data Science

Opportunity Reference Code: IC-16-38

Organization Office of the Director of National Intelligence (ODNI)

Reference Code IC-16-38

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

Description Organizations across the globe increasingly use data science to inform their analyses and decision making. The data science field, however, has only begun to investigate the impact of limits in human cognition on the discipline. It is unclear the extent to which heuristics and bias impact data scientists and the integration of data science into broader analyses and decision-making. What are the common mistakes and cognitive limits when using data science in problem solving and how do these influence the selection of methods to conduct analysis? How data scientists gather and analyze data can introduce cognitive bias and heuristics. Understanding the effect of common mistakes and cognitive limits on data science is necessary to developing best practices to mature this discipline.

Example Approaches:

Has cognitive science, psychology or other related field identified new heuristics in decision making or reasoning that are relevant to data science?

Using existing data, what cognitive biases and heuristics are involved in data-driven analysis?

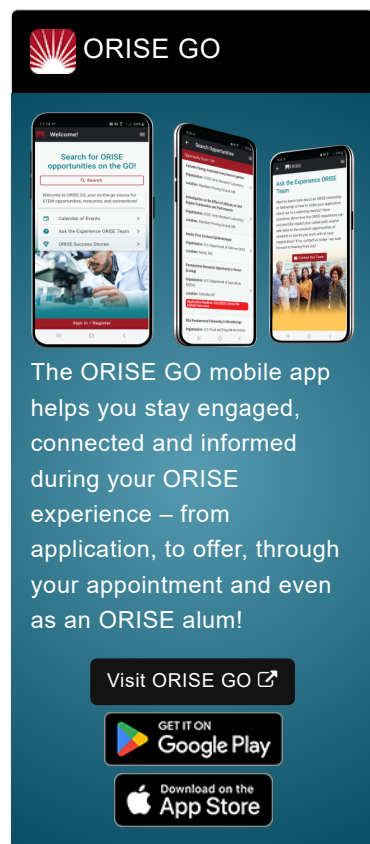
How do working memory limitations, cognitive patterns, and bias—such as data availability¹ bias—affect constructing data science approaches to problem solving?

What are some of the best practices in mitigating the effects of cognitive limits?

Which lessons from the computational social sciences discipline have been adopted by data science?

¹ Data availability bias is a play on words for availability bias, which refers to a cognitive bias to use only the information that is easily retrievable or available from memory to make a decision or analyze a problem.

Eligibility • **Citizenship:** U.S. Citizen Only



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- Requirements**
- **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](#) )