

LibRA: On LinkedIn based Role Ambiguity and Its Relationship with Wellbeing and Job Performance

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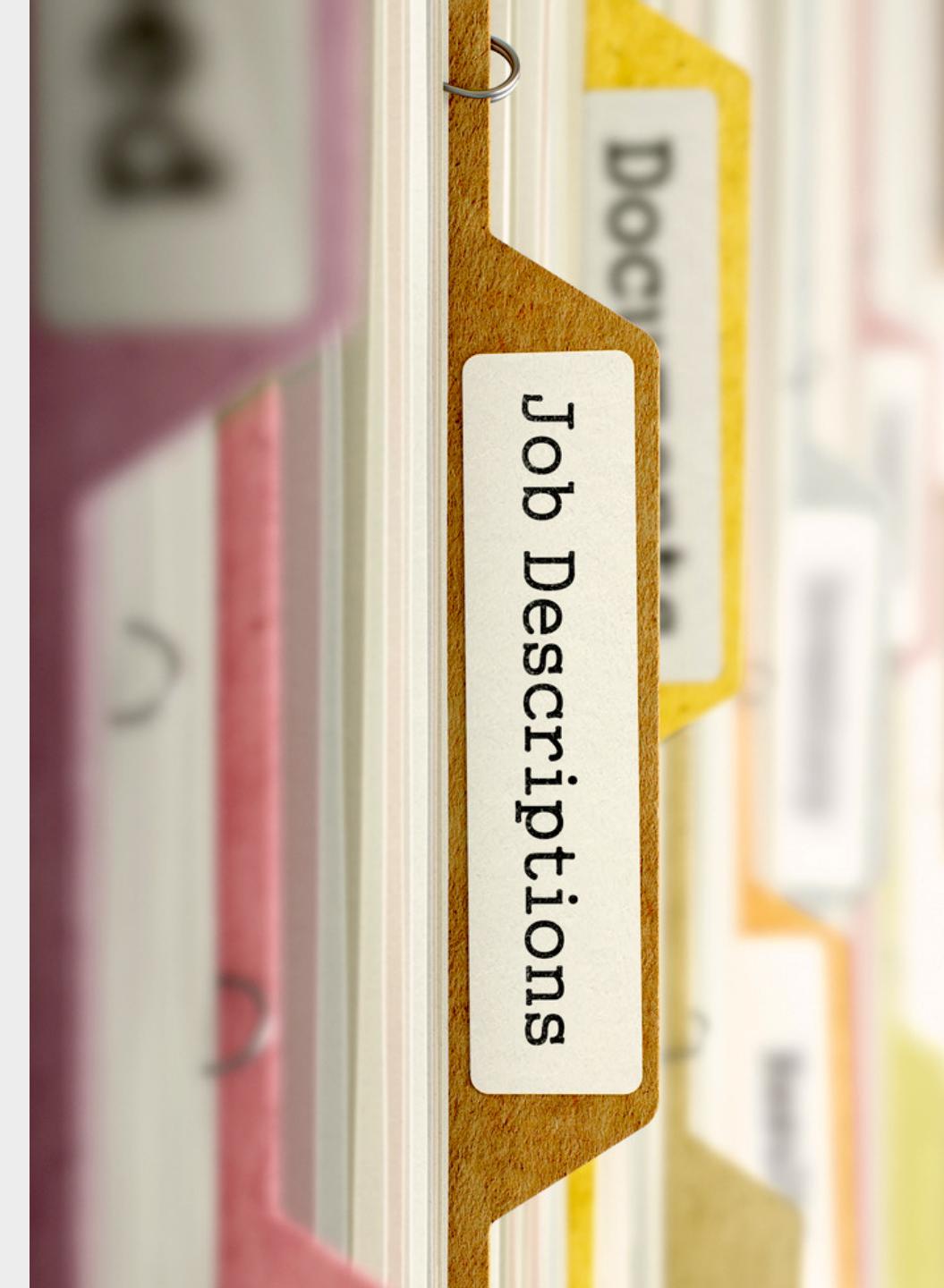


Job satisfaction is of prime interest to both individuals as well as the organizations.

ROLE AMBIGUITY

Role Ambiguity occurs when there is a **discrepancy** between:

- ... what an **employer expects**, and
- ... what an **employee does**



ROLE AMBIGUITY

- Lack of clarity regarding:
 - definition of the role
 - expectations associated with a role
 - methods for fulfilling known role expectations, and/or
 - the consequences of role performance.
- Leads to dissatisfaction, distrust, lack of loyalty, turnover, absenteeism, low performance, anxiety, increased heart rate

Measuring Role Ambiguity



LinkedIn: “The Facebook in a suit”

RESEARCH AIMS

- To measure role ambiguity using LinkedIn data
- To examine the relationship of LinkedIn based Role Ambiguity (LibRA) with individual wellbeing and job performance
- To investigate what factors may contribute to one's LibRA

STUDY AND DATA: TESSERAE



LinkedIn



Wearable



Smartphone



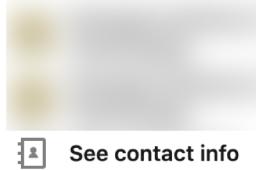
BT Beacon



Surveys

LIBRA: LINKEDIN BASED ROLE AMBIGUITY

The quantified **differences** in an individual's **self-explained responsibilities** against the employer's **posted responsibilities** for the same role.



Message



See contact info
 connections

Freshly Experienced Software Engineer with a demonstrated history of working in the computer software industry with [REDACTED]. Invested in strong programming fundamentals with an ability to quickly learn new technologies and demonstrable skills in a plethora of systems based around Python, C#, SQL, NodeJs, Angular, C++.

An Ongoing [REDACTED] with a specializing in Machine Learning.

Software Development Engineer

Worked for Core Services Engineering [REDACTED] with the C [REDACTED] that serves the Sales Excellence Personnel of [REDACTED] and ensures they generate revenue as quickly as possible.

Delivered mission-critical systems that generate large amounts of data capable of directly influencing key decision makers of the company. Constantly strived to improve the system to be fault resilient and reliable as the bytes that flow through it impact all of [REDACTED]

On a Technical note, I designed and built a highly scalable API leveraging [REDACTED] that brought down a business process from 2 weeks to 5 days with 0.1% inconsistencies churning more than 25 million requests during the said period. See less

Software Development Engineer

[Apply now >](#) Save

Job number [REDACTED]

Date posted [REDACTED]

Travel 0-25 %

Profession Engineering

Role type Individual Contributor

Employment type Full-Time

We are a small, agile team responsible for delivering the [REDACTED] software stack running on every server in the [REDACTED]. As a Software Engineer working with us, your mission will be to design, develop and ship features at global scale to meet continuously evolving customer needs while ensuring that the [REDACTED] platform is operating with high reliability and availability. We are keenly interested in highly self-motivated systems software engineers with the ability to handle all aspects of the software lifecycle and with a deep passion for fundamentals. Key to success in this position is the aptitude to develop creative solutions and debug challenging problems working through multiple layers in the software stack.

Responsibilities:

Design, build and support software to support [REDACTED]

Drive for efficiency in the engineering process.

Responsibilities

Design, build and support software to support [REDACTED]

Qualifications

Qualifications:

-BS/MS in Computer Science or related field/degree, and/or equivalent work experience.

-Proficient in C/C++

-Fluency in coding, rapid prototyping

-Strong cross group collaboration skills

-Ability to handle periodic live service on-call responsibilities and work in dev-ops mode

[REDACTED] This position will be required to pass the [REDACTED] upon hire/transfer and every two years thereafter.

[REDACTED] is an equal opportunity employer. All qualified applicants will receive consideration for employment without regard to age, ancestry, color, family or medical care leave, gender identity or expression, genetic information, marital status, medical condition, national origin, physical or mental disability, political affiliation, protected veteran status, race, religion, sex (including pregnancy), sexual orientation, or any other characteristic protected by applicable laws, regulations and ordinances. We also consider qualified applicants regardless of criminal histories, consistent with legal requirements. If you need assistance and/or a reasonable accommodation due to a disability during the application or the recruiting process, please send a request via the [Accommodation request form](#).

Benefits/perks listed below may vary depending on the nature of your employment with [REDACTED] and the country where you work.

ASSESSING LIBRA: USING O*NET ONTOLOGY

O*Net¹ is an online database and job ontology that contains comprehensive list of jobs and their descriptions.

Job Aspect	Description
Abilities	Enduring attributes of the individual that influence performance.
Interests	Preferences for work environments and outcomes.
Knowledge	Organized sets of principles and facts applying in general domains.
Skills	Developed capacities that facilitate learning or the more rapid acquisition of knowledge.
Work Activities	General types of job behaviors occurring on multiples jobs.
Work Context	Physical and social factors that influence the nature of work.
Work Styles	Personal characteristics that can affect how well someone performs a job.
Work Values	Global aspects of work that are independent to a person's satisfaction.

¹ Developed under the sponsorship of the U.S. Department of Labor/ Employment and Training Administration (USDOL/ETA).

ASSESSING LIBRA: WORD EMBEDDINGS

For every individual, obtain word-embedding projections (**cosine similarity**) on O*Net based eight job aspects of:

- Their **LinkedIn summary** (v1)
- The **job summary** of the same role as posted by the **company** (v2)

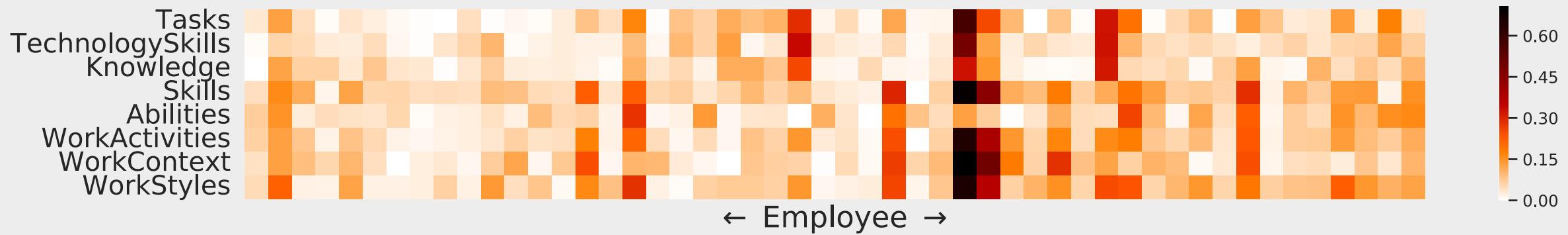
LibRA = Euclidean Distance (v1 – v2)

LIBRA: CRITERION VALIDITY

Spearman's correlation of
LibRA and Survey¹ based role ambiguity = **0.22** ($p < 0.05$)

¹ David A Nadler, G Douglas Jenkins, Cortlandt Cammann, and Edward E Lawler. 1975. The Michigan organizational assessment package: Progress report II. Ann Arbor: Institute for Social Research, University of Michigan (1975)

LIBRA IN OUR DATASET



LIBRA AND WELLBEING / JOB PERFORMANCE

Greater role ambiguity is associated with...

- ...increased heart rate
- ...increased stressful arousal
- ...decreased sleep
- ...reduced work-hours

Greater role ambiguity is associated with...

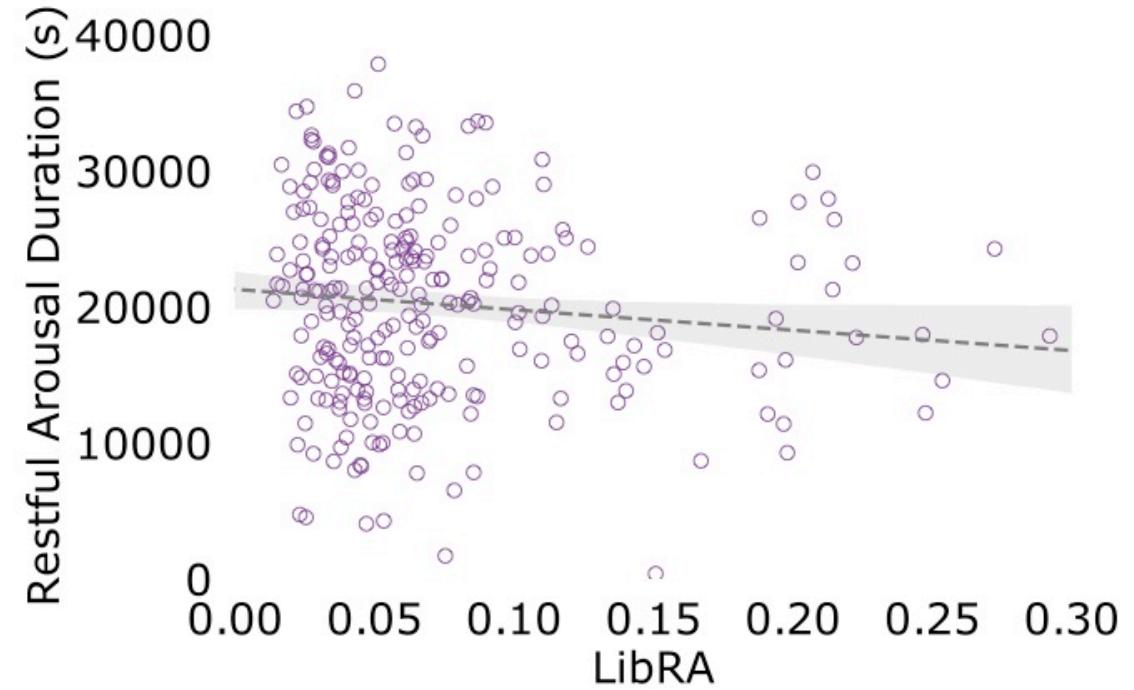
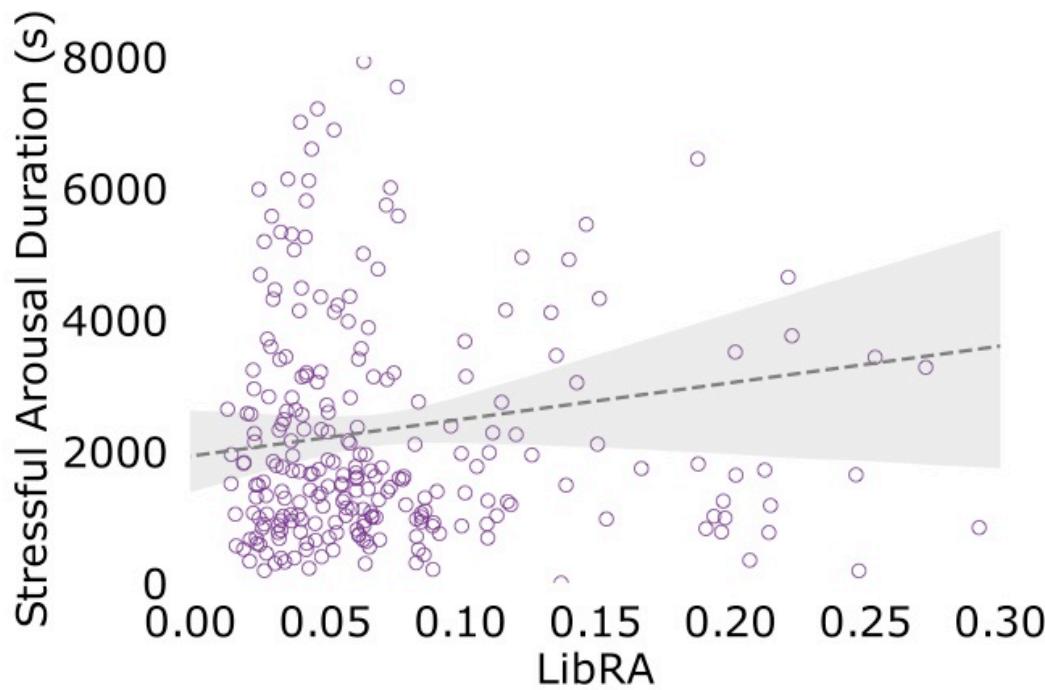
- ...decreased task performance
- ...decreased organizational citizenship

Hypotheses

$$\sim gender + age + education_level + income + supervisory_role + tenure + job_type + executive_function + personality_trait + LibRA$$

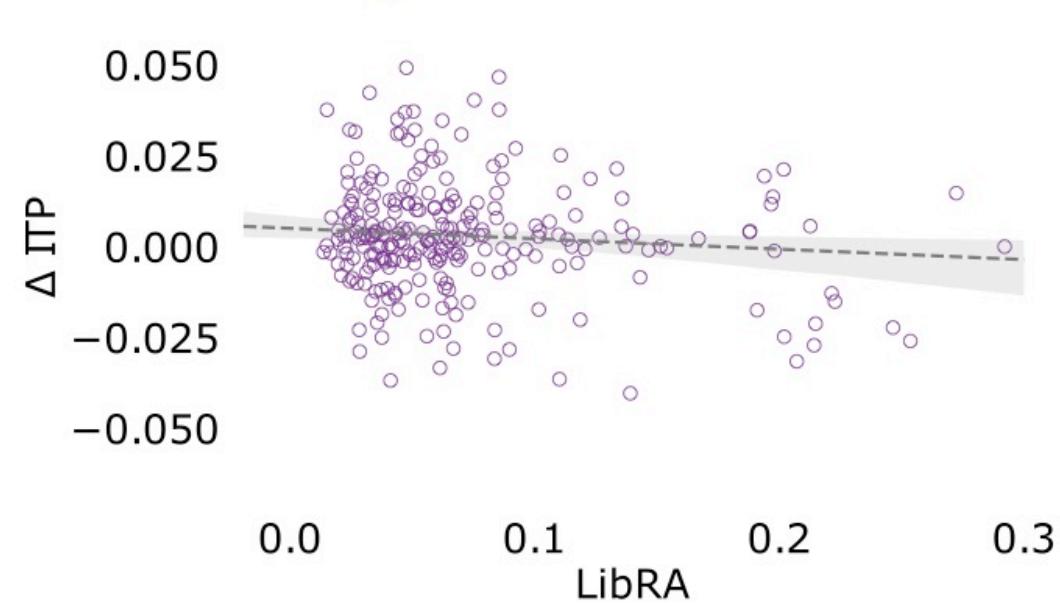
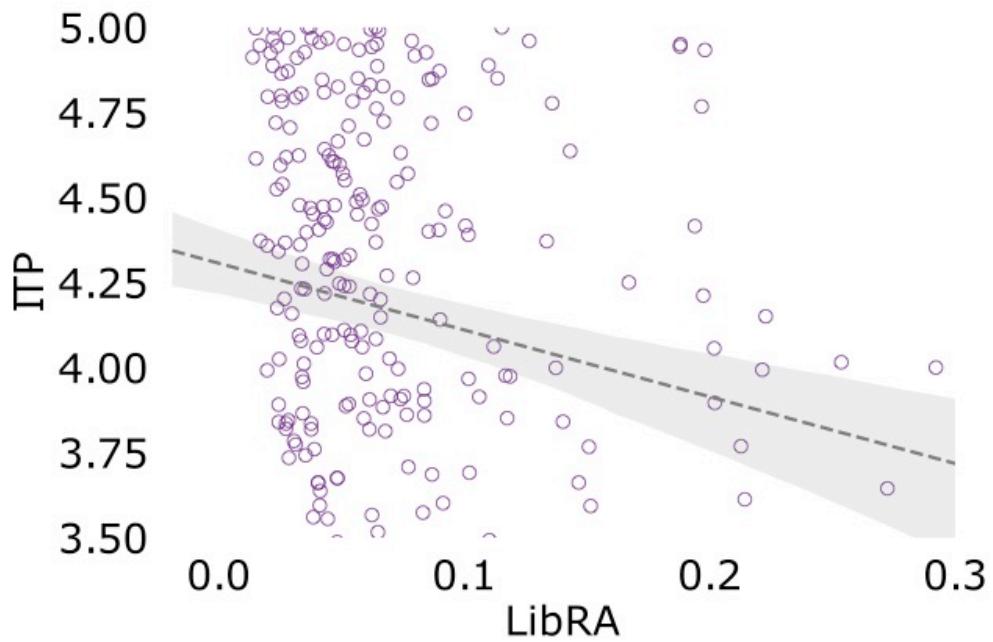
LIBRA AND WELLBEING (AROUSAL)

H2 **Supported**: LibRA has **positive** relationship with **stressful arousal**, and **negative** relationship with **restful arousal**



LIBRA AND JOB PERFORMANCE (TASK PERFORMANCE)

H5 **Supported**: LibRA has **negative relationship** with task performance, and **negative relationship with change in task performance**



SUMMARY OF AIM 2

LibRA is associated with **depleted wellbeing and job performance**

FACTORS AFFECTING LINKEDIN BASED ROLE AMBIGUITY (LIBRA)

INVESTIGATING FACTORS AFFECTING LIBRA

Individuals' Organizational Behavior

- Looking for new job opportunities / generally settled at work
- Proactive behavior

INVESTIGATING FACTORS AFFECTING LIBRA

Individual-Intrinsic Factors

- Mindset (Growth vs. Fixed)
- Differences in self-presentation behavior on social media

INVESTIGATING FACTORS AFFECTING LIBRA

Job-Related Factors

- “Cool” job titles (eg, ninja) can affect role ambiguity
- Companies encouraging / discouraging LinkedIn
- Confidential projects / non-disclosure agreements

INVESTIGATING FACTORS AFFECTING LIBRA

Audience, Privacy, and Platform Factors

- Invisible audience
- Surveillance / Subjective expectation of privacy

IMPLICATIONS

- Theoretical Implications
- Practical and Technological Implications
 - Individual-Centric Implications
 - Organization-Centric Implications
- Social Computing Implications
- Ethical, Privacy, Social, and Policy Implications

PRACTICAL AND TECHNOLOGICAL IMPLICATIONS

- Individual-Centric Implications
 - Self-Reflection Tools
- Organization-Centric Implications
 - Training
 - Informed role matching and internal hiring

ETHICAL AND POLICY IMPLICATIONS

- Raises new questions on the privacy-breach of individual information
- Not intended to facilitate employee surveillance
- Guidelines on data-driven decision making

Saha, K., Reddy, M. D., Mattingly, S., Moskal, E., Sirigiri, A., & De Choudhury, M. (2019). Libra: On linkedin based role ambiguity and its relationship with wellbeing and job performance. *Proceedings of the ACM on Human-Computer Interaction*, 3(CSCW), 137., <https://dl.acm.org/citation.cfm?id=3359239>

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This research is supported in part by the Office of the Director of National Intelligence (ODNI), Intelligence Advanced Research Projects Activity (IARPA), via IARPA Contract No. 2017-17042800007.



Thank You
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