

Decision Intelligence for Institutional Safety and Security

Summary



Mass & School Shootings

Planned attacks to inflict mass casualties



Hate Crimes

Motivated by race, religion, or orientation



Workplace Violence

Attacks on employers, coworkers, or clients



Suicidal Ideation

Thoughts, plans, or intent to end one's life



Other Prevalent Types

Bullying • Stalking • Gun Violence

Violence risk assessment is one of the most consequential challenges facing public and private institutions in the United States. A critical safety/security challenge is meeting the demands of more than 150,000 such stakeholders. While Structured Professional Judgment (SPJ) frameworks have improved the rigor and consistency of clinical and law enforcement evaluations, there are still persistent barriers to broad adoption. Many institutions face growing demand for threat assessment but lack enough trained specialists to apply SPJ methods broadly

and consistently. By combining expert-informed qualitative reasoning with transparent AI-driven analytics, Cogynt.ai improves triage, supports mitigation planning, and preserves human oversight. The platform is designed for flexible deployment, alignment with institutional policy, and adaptation across multiple threat contexts.

Challenge

Violence risk assessment is one of the most consequential challenges facing public and private institutions in the United States. More than 150,000 organizations—including approximately 18,000 law enforcement agencies, 17,000 municipalities, 13,000 school districts, and 99,000 public schools—must identify, evaluate, and manage individuals who may pose a risk of targeted violence, stalking, bullying, or related threats.

Although awareness has grown and the research base has matured, current assessment methods remain difficult to deploy at the scale this landscape demands. Structured Professional Judgment (SPJ) frameworks have improved the rigor and consistency of clinical and law enforcement evaluations by guiding practitioners through evidence-based risk assessment processes. Yet these approaches still face barriers to broad adoption: implementation costs beyond licensing, dependence on highly trained personnel, limits in predictive accuracy and false-positive performance, ethical and legal concerns about bias, limited support for actionable mitigation planning, and organizational resistance from practitioners who favor experiential judgment over structured instruments. The result is that many institutions that need evidence-based threat assessment still lack the resources, expertise, or infrastructure to apply it effectively.

Solution

Cogynt.ai is an integrated Decision Intelligence platform that combines the empirical grounding and contextual sensitivity of SPJ methodologies with the scalability, transparency, and predictive strength of expert AI systems. The solution builds on Cogility's Cogynt Decision Intelligence engine, which uses Hierarchical Complex Event Processing (HCEP) to encode expert knowledge into transparent, computable analytical frameworks.

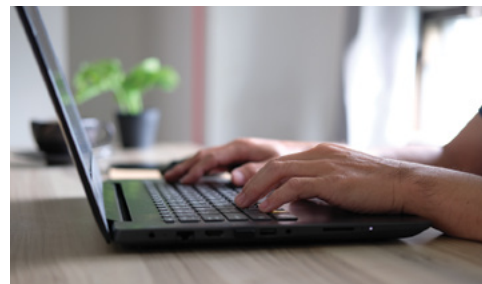
At the core of Cogynt.ai is an adaptation of the SOFIT 2.0 (Sociotechnical and Organizational Factors for Insider Threat) knowledge base. This foundation catalogs hundreds of Predictive Risk Indicators (PRIs) mapped to behavioral patterns associated with threat types of concern – targeted violence and suicidal ideation. The tool has been tailored to incorporate validated SPJ guidance related to targeted violence, stalking, bullying, and suicidal ideation. Through calibration based on expert judgment, the knowledge base produces metrics designed to support evidence-based, consistent assessment. As a result, Cogynt.ai can scale from one-on-one interviews to broader population screening and monitoring while preserving explainability and human oversight. By integrating qualitative expert judgment with quantitative behavioral analytics, the platform provides triage support that can meet increasing demands of public and private safety/security professionals.

Benefits

- Economy of scale
- Expert system reflects specialized knowledge
- Objective knowledge-based process helps to overcome bias
- Improved accuracy
- Integrated risk mitigation strategies

Why Existing Approaches Don't Scale

- Because SPJ relies on a human evaluator and often requires specialized training, it remains difficult to deploy consistently and at scale across the nation's institutions.
- While SPJ improves on unaided clinical judgment, it still has inherent limits in discriminative accuracy.



How It Works

Cogynt.ai is designed for flexible deployment across institutional settings. It can operate on standard laptop or desktop hardware, with or without a network connection, and supports guided interviews and questionnaires that organizations can tailor to their own workflows, policies, and privacy requirements. This makes the platform suitable for both stand-alone use and broader operational environments in which assessment results may need to be retained locally or shared in accordance with institutional rules.

Across the assessment lifecycle, Cogynt.ai is intended to improve consistency, transparency, and actionability. It supports information gathering, highlights relevant associations between indicators and behaviors, and helps summarize evidence for analyst review. It is also being developed to strengthen mitigation planning by identifying practical interventions and potential offramps for at-risk individuals. Throughout the process, the platform preserves human-in-the-loop oversight and provides traceable analytical support to strengthen ethical and legally defensible decision-making.

The platform supports multiple guided-interview templates across different risk contexts and can adapt dynamically as new indicators emerge. A case may begin with one presenting concern and shift toward another as evidence develops. This gives users such as school counselors, public safety staff, or trained personnel at other public or private organizations a structured way to manage evolving assessments. In larger-scale settings, the platform can also support real-time triage across multiple active cases.

For active cases, Cogynt.ai can retain sessions, incorporate newly collected information with user approval, and update assessments as interviews and other evidence-gathering activities continue. It supports multiple response formats and continuously refreshes risk indicators, follow-up prompts, and behavior-specific assessments. This allows organizations to maintain continuity across an extended assessment process before a final human judgment is made.

- User engages the system
- Information input (narrative and/or online data)
- Indicator detection (via keyword and LLM/expert AI)
- Knowledge representation via HCEP
- Risk assessment
- Mitigation Strategies
- Full Transparency/provenance

Performance

Validation of the Cogynt.ai platform in the related domain of insider risk management has produced exceptional results: In expert knowledge elicitation studies, the Cogynt.ai model showed strong agreement with subject matter expert consensus judgments – e.g., precision = 0.96, recall = 1.00, false positive rate = 0.03, false negative rate = 0.00.

A recent preliminary validation study specific to the Cogynt.ai violence risk assessment application has also shown very promising results: Case files for ten school violence cases were analyzed by the Cogynt.ai behavioral analytic model. For all ten cases (see example at right), the model's triage outputs were consistent with the actual risk assessments for violence or suicidal ideation.

Case 1: Firearm Social Media Warning

- High School sophomore referred for assessment after a classmate submitted an anonymous tip regarding a **social media post with a photograph of a firearm** and a **warning not to attend school the following day**, with specific references to third-period math.
- Prior **online searches related to firearms** were noted.
- Available school records indicate **prior disciplinary action** related to **fighting**, classroom **disruption**, and **substance abuse**.
- Additional records include a staff report about a history of the student making **threats toward peers** when aggravated.
- The student also has a **previous battery charge**.
- Family contact indicates a **stable and supportive home environment**, although the student helps support the family financially.
- No current concerns regarding interpersonal functioning, extremist beliefs or mental health.

Expert Assessment of Risk

Violence Risk: HIGH

Suicidal Ideation: Low/None

Cogynt Model Assessment (0-100):

Violence Risk: 96 [HIGH]

Suicidal Ideation: 22 [None]

Mitigation Plan:

Place student in a Threat Assessment process and create a safety plan.

Achieve Decision Advantage

With almost two decades of research and development behind it, Cogynt.ai stands as the decision intelligence platform of choice for government and commercial organizations. With the recent adaptation of this platform to address challenges of targeted violence, Cogility delivers a scalable solution for large and small institutions to conduct high-quality violence risk assessment without removing human judgment from consequential decisions. Cogynt.ai meets that need by combining expert-informed reasoning with transparent AI support. We seek collaboration with data partners, stakeholders, academic researchers, and industry analysts to refine and further validate this approach.

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