

◆ TRANSFORM DATA INTO DECISION ADVANTAGE

Data Science and Artificial Intelligence



Mission-Focused Analytics and AI for
Predictive Insight and Operational Impact





Our Approach

Defense and national security leaders face an expanding volume of information and less time to act on it. SPA combines mission expertise with advanced analytics to uncover patterns, anticipate challenges, and inform

critical decisions. Our teams synthesize diverse sources and use proven analytical methods and artificial intelligence and machine learning (AI/ML) to turn information into insight for dynamic, high-risk environments.

◆ **Reveal What Matters**

SPA transforms disparate information into meaningful insights that give decision-makers a clearer picture of evolving conditions.

- Synthesizes text, imagery, signals, and other data sources
- Identifies patterns, trends, and anomalies
- Sharpens awareness of emerging risks and opportunities

◆ **Anticipate What Comes Next**

Predictive modeling and advanced analytics expose potential outcomes and risks before they affect critical objectives.

- Forecasts threats, vulnerabilities, and system performance
- Examines potential scenarios
- Informs planning and resource decisions

◆ **Accelerate the Path to Action**

SPA operationalizes AI/ML and analytical methods to streamline demanding work and deliver timely information for critical decisions.

- Automates resource-intensive processes
- Generates recommendations tailored to operational challenges
- Enables rapid response as conditions evolve





Applying Data Science Where Decisions Matter Most

SPA brings together data science, artificial intelligence, and deep domain expertise to address national security challenges. Our teams work across the data lifecycle,

establishing reliable foundations for analysis and delivering predictive models, automation, and AI/ML for real-world applications.

◆ Data Engineering

Curates and correlates high-quality data to provide a robust foundation for reliable analysis.

- Integrates disparate data sources
- Improves quality and consistency
- Establishes mission-focused data governance

◆ Data Exploitation and Visualization

Turns large volumes of information into clear findings that reveal relationships and relevant activity.

- Examines text, imagery, signals, and other data types
- Uncovers trends and anomalies at scale
- Communicates findings through accessible visualizations

◆ Advanced Analytics and Predictive Modeling

Uses statistical and predictive methods to anticipate outcomes, assess risk, and deepen understanding.

- Models potential outcomes and system performance
- Assesses scenarios and trade-offs
- Produces predictive insights for planning

◆ Artificial Intelligence and Machine Learning

Develops and applies advanced computational approaches that enable machines to reason and adapt in changing environments.

- Applies inference, reasoning, prediction, and classification
- Detects patterns and anomalies at scale
- Delivers insights and recommendations across massive data sets

◆ Human-Machine Teaming and Automation

Pairs human expertise with machine-driven analysis to improve workflows and accelerate execution.

- Streamlines demanding analytical processes
- Incorporates machine learning with traditional approaches
- Reduces cognitive burden in high-pressure environments

SPA Fellow



Dr. Amy Soller
Fellow, Applied Artificial Intelligence

Dr. Amy Soller brings more than three decades of technical and executive leadership across government and industry in artificial intelligence and emerging technologies. At SPA, she leads AI/ML and intelligent automation strategy, drawing on experience directing AI capability development and national-level AI strategy across the defense and intelligence communities.





Real-World Mission Impact



Delivering Reproducible Critical Infrastructure Analytics

For the Department of Homeland Security Cybersecurity and Infrastructure Security Agency, SPA led development of the Suite of Tools for the Analysis of Risk (STAR), a cloud-based risk analytics engine. Reproducible assessments at national, functional, asset, and technology levels enable decision-makers to prioritize resources, mitigate risk, and strengthen critical infrastructure resilience.



Accelerating Decisions with AI-Driven Insights

SPA collaborated with the Space Security and Defense Program, a joint Department of Defense and Director of National Intelligence initiative, to define US Space Force capabilities against adversary intelligence systems. The effort generated new intelligence tasks to focus collection efforts, refine tactics and procedures, and guide capability development roadmaps.



Enhancing Decision-Making with Kill Web Operational Analysis

For more than 10 years, SPA has conducted kill web operational evaluations for the Office of the Under Secretary of War, Research and Engineering. By modeling operations from multiple perspectives, SPA identifies capability gaps, emerging threats, and technical challenges to inform senior decision-makers.

Who We Serve

Office of the Secretary of War

Department of Homeland Security

North Atlantic Treaty Organization

Joint Chiefs of Staff

Missile Defense Agency

Australian Department of Defence

United States Army

Multiple Intelligence Agencies

United States Navy

National Aeronautics and Space Administration

Australian Department of Home Affairs

United States Marine Corps

United States Coast Guard

Department of Commerce

Australian Taxation Office

United States Air Force

Department of Transportation

Australian Department of Health, Disability, and Ageing

United States Space Force

Department of Energy

Services Australia

Defense Advanced Research Projects Agency

Royal Canadian Navy

Australian Department of Social Services

Defense Threat Reduction Agency

United Kingdom Ministry of Defence

Decision Advantage for National Security

Systems Planning & Analysis (SPA) is a global, independent analytical and technical innovation firm advancing complex national security priorities. SPA delivers mission engineering, advanced analytics, operational insights, and technology-enabled solutions that accelerate capability delivery and inform strategic decision-making across defense, intelligence, homeland security, and other critical mission areas.



spa.com



For more information, email: info@spa.com
2001 N Beauregard Street,
Alexandria, VA 22311
703.931.3500

