

Data Science and Analytics Core Capabilities

The Veracity Forecasting Group (VFG) within Systems Planning and Analysis, Inc., delivers innovative, state-of-the-art Decision Support products. Deeply grounded in data science and analytical expertise, our Ph.D.-level staff combine their multiple talents to create Decision Support products tailored to each customer. We support the Department of Defense primarily in aviation inventory management and rocket motor aging and surveillance, but our analytical process is easily adaptable and has been introduced in areas such as U.S. Navy human capital management.

Our Process

Veracity developed the Naval Synchronization Toolset (NST) process in 2011 to support Naval Aviation in managing F/A-18 inventory and maintenance planning. Now well-established and relied upon by top leadership, “NST” is the term broadly used for our computational Decision Support services available to any customer in the Naval Aviation Enterprise.

Data Science

Data science is at the core of the NST process. We employ the full range of modern techniques, including data manipulation, machine learning, and visualization. Through these techniques we enable enhanced, timely decision-making, trend analysis, and data-driven forecasting.

Data Analytics

VFG possesses expertise and extensive past performance in descriptive, predictive, and prescriptive analytics. Data analysis is the central pillar of NST’s prescriptive analytics approach. In addition, part of the NST process includes routinely using code and scripting tools to develop automated analyses.

Machine Learning

VFG is expert in classic data mining techniques as well as superior machine learning approaches such as deep networks and random forest. We have applied machine learning models to various analytical problems in both aircraft inventory management and rocket motor aging and surveillance. In a Small Business Innovative Research project, VFG initiated and developed Augmented Machine Learning concepts for optimizing machine learning with other types of analysis.

Data Extraction

We routinely write scripts to extract and fuse data from a variety of raw, disparate data sources and formats, such as CSV, MS Excel, MS Access DB, XML, PDF, JSON, and SQL-like relational databases. We use standard data science languages such as R or Python to translate the source data into a usable form, or we can directly ingest the data into commercial visualization software, such as Tableau.

Statistics

Most of the analysis we do requires a high level of expertise in statistics. We perform regression analysis, calculate confidence intervals, and evaluate the trends for statistical significance.

Points of Contact

For more information please contact Mike Macedonia at m.macedonia@veracityfa.com or Darryl Lenhardt at d.lenhardt@veracityfa.com.

Key Benefits of VFG’s Approach and Experience

- Analytic capabilities identify and mitigate risk in multiple areas
 - > Acquisition
 - > Inventory management
 - > Budget
- Exceptional decision support products and services are tailored to each customer
 - > State-of-the-art data visualization
 - > “What-if” forecasting and analysis