



OUR KEY DIFFERENTIATORS

Nyla's core competencies in software and systems engineering provide the foundation for our Data Science expertise, including often overlooked branches of Data Science key to successful AI and ML:

- Data Engineering
- Exploratory Data Analysis
- Data Visualization
- Data Modeling
- Data Storage
- Synthetic Data Generation
- System Engineering and Consulting

We meet clients and customers at their current state of data science maturity to evolve their culture and systems to take on AI solutions rapidly and successfully.

CORE DATA SCIENCE SERVICES

Nyla specializes in data science development for the Department of Defense. We have an exceptional reputation for innovative approaches, strategic thinking, and customer engagement, as well as, a comprehensive knowledge of mission. We apply all core data science competencies, to include:

- Big Data Analytics (MapReduce, Streaming, Edge)
- Data Architectures/Data Flow
- Machine Learning/Artificial Intelligence
- Statistical Analysis

PAST PERFORMANCE



1 Cybersecurity Analytics Case Study

We applied machine learning techniques with Spark, Python, and R in Cloud and HPC environments to improve characterization of network traffic and automatically detect anomalies. For example, we hypothesized that certain features of network flow data can uniquely identify certain network protocols and generated models to test this hypothesis.

Results

We developed original code and technical documents to describe a new way to label network data at collection time. This allowed us to more efficiently and adaptively detect anomalous and potentially malicious network traffic for the customer.

2 Business Intelligence Data Science Platform Case Study

We developed a database analysis tool suite with data categorization and quality analysis capabilities and created multi-source data models and prototypes for a cloud data warehousing platform. We leveraged expertise in SAP Hanna, Tableau, Power BI, Python, SQL and R to accomplish this task.

Results

The client acknowledged our exceptional on-time delivery to meet the IoC. Our team successfully developed, tested, and deployed the dashboard to the Production system for further user acceptance testing.

EXAMPLES OF CUSTOMER CHALLENGES AND HOW NYLA CAN HELP

Exploratory Data Analysis



Customer Challenge

You are inundated with one or more data sets and know you want to apply data science/machine learning techniques to characterize behaviors in your data, detect anomalies, or predict outcomes.

Nyla DS Capabilities

Through statistical analysis, data visualization, and system engineering our team provides recommendations for machine learning applications while also considering data storage and processing constraints. We meet clients where their data is, with experience leveraging AWS, Azure, and custom data lakes to analyze and explore data in all forms (unstructured/structured text, image, voice, and video).

Synthetic Data Generation



Customer Challenge

Machine learning applications require massive data sets for model training and testing. In some cases these data sets may also include sensitive data that a customer may want to limit access to or reside on systems in developmental state where formats and structure are in flux.

Nyla DS Capabilities

Our team will identify statistically significant features of a data set. These features will then be used to generate synthetic data through an iterative process, leveraging significant compute for random number generation. Synthetic data will be refined through statistical tests to produce a new data set which can be used to supplement or replace small or sensitive customer data sets. With this technique, we also have the ability to provide a transparent level of fidelity on how the synthetic data improves the application's results.

DevOps for Machine Learning



Customer Challenge

As analysts become more familiar with data science and machine learning techniques, prototype and one-off machine learning models are developed to enhance individual or small groups of analysts often via Jupyter Notebooks or comparable browser tools.

Nyla DS Capabilities

Our team recognizes that ML DevOps requires a different approach and techniques than standard DevOps. We work with analytic developers and data scientists to provide solutions that sustain machine learning capabilities through development and deployment within scalable architectures. Additionally, we will recommend and provide continued evaluation and re-training of models within a machine learning application.



DATA SCIENCE LEADERSHIP



SHANA COSGROVE
Chief Executive Officer

Shana Cosgrove is founder, owner, and CEO of Nyla Technology Solutions, Inc.. As a principal engineer, enterprise architect, and product strategist, she possesses a combined 20 years of experience supporting clients in the United States Intelligence Community and Department of Defense.



STEPHANIE BEBEN
Chief Data Scientist

Stephanie Beben applies more than 10 years of experience and technical thought leadership in Machine Learning, Artificial Intelligence, Large-Scale Graph Analytics, Natural Language Processing, Data Visualization, and Rapid Prototyping across multiple sectors.

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