



Naval Information Warfare Center Atlantic

How We Built Our AI Practice through Entrepreneurial Endeavors

Presented To:

AI in Government

Presented by:

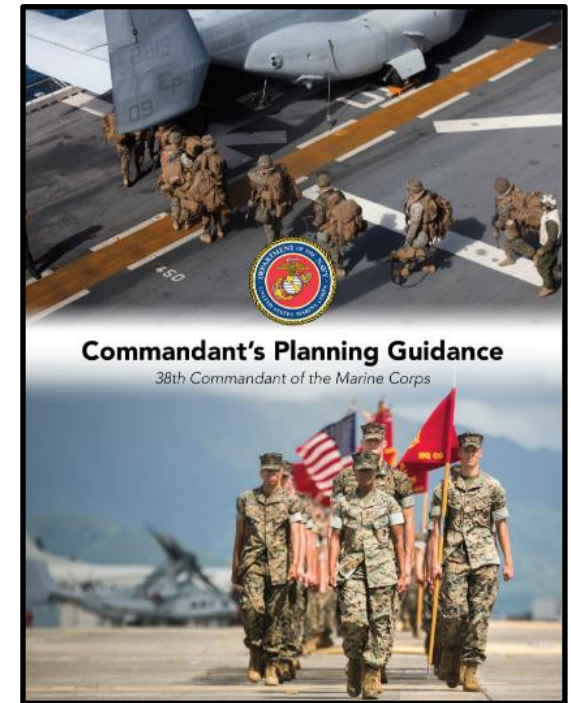
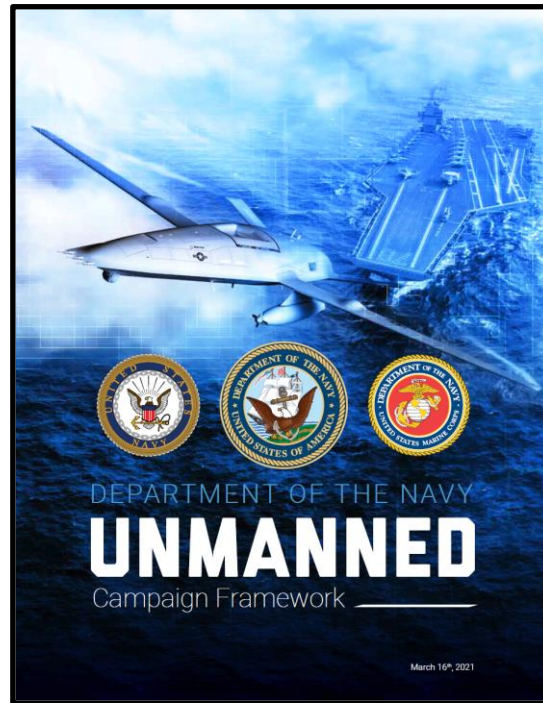
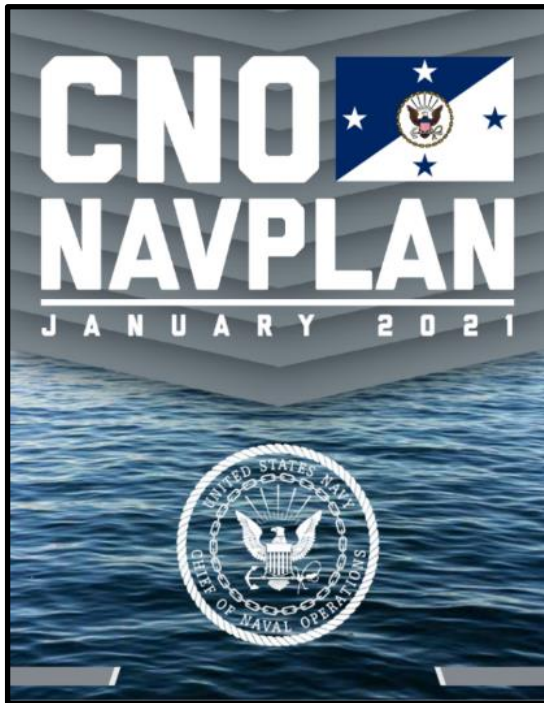
Mr. Robert Keisler, SSTM

*Director, Data Science & Analytics
NIWC Atlantic 5.6 Engineering Competency*

March 2022

Strategic Alignment and Investment

Data Science and Artificial Intelligence (AI) are important pillars in the future Naval force and key to NIWC Atlantic's value to the Navy



Our Entrepreneurial Approach

- ▼ We were an “early adopter”
- ▼ We wanted to shape the change to come
- ▼ We needed to think outside of the box
- ▼ We needed to create value
- ▼ We needed to learn quickly

This new era of competition promises to change the world we live in and how we live within it. We can either shape the change to come or be swept along by it. The principles we establish, the federal investments we make, the national security applications we field, the organizations we redesign, the partnerships we forge, the coalitions we build, and the talent we cultivate will set America’s strategic course. AI is going to reorganize the world. America must lead the charge.

– *National Security Commission on AI*

Our Focuses

People



Places to Work



Product Development

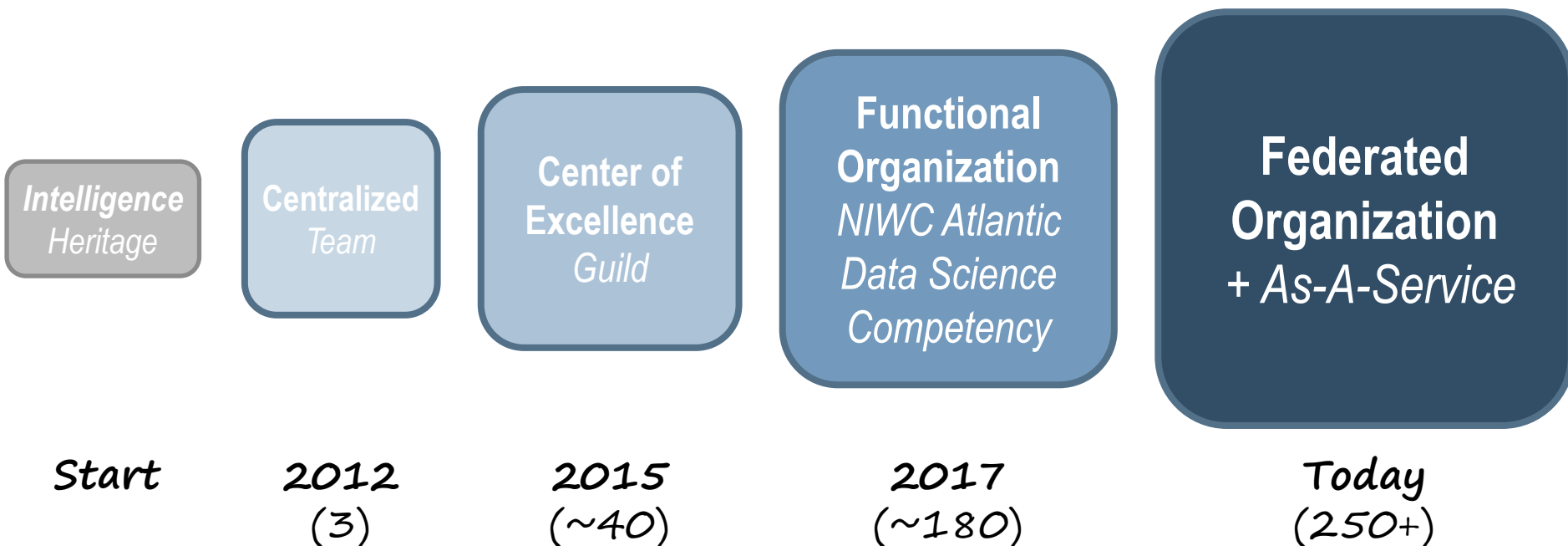


Build the right data and AI capabilities for the DoD/DON

People



Organizational Journey



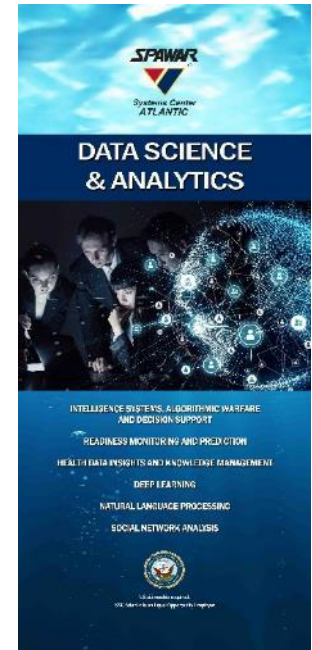
10+ Years to mature this capability with the **first data science hires in 2012** with modern “data science” terminology only beginning in 2008

Bring People Together



People Lessons Learned

- ▼ Target Local Talent Pools
- ▼ Market the Mission
- ▼ Hire to Skills then Develop Them
- ▼ *Use Your Talent to Target Diversity*
- ▼ *Be a Great Place to Live*



Places to Work

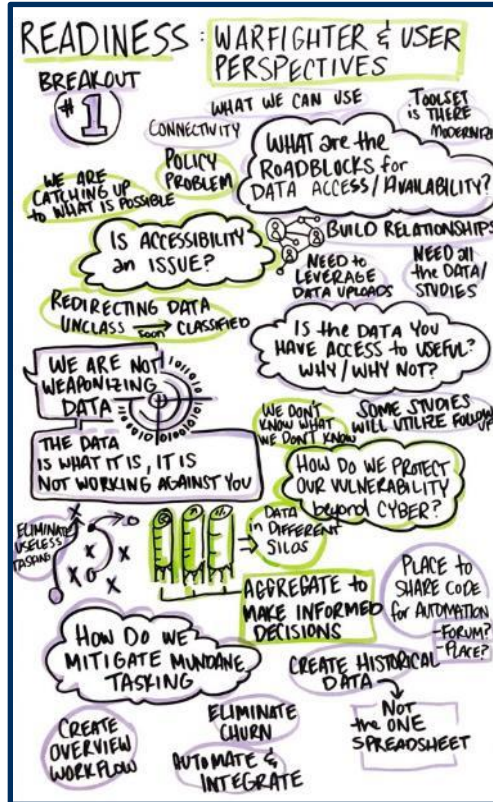


Places to Work Lessons Learned

- ▼ (Virtual) Collaboration Areas are Important
- ▼ Providing Talent with the Right “Home” Matters
- ▼ *A Pandemic Can Change Everything*

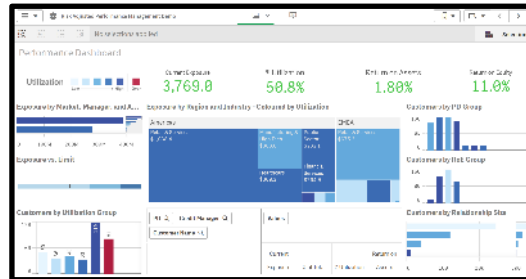
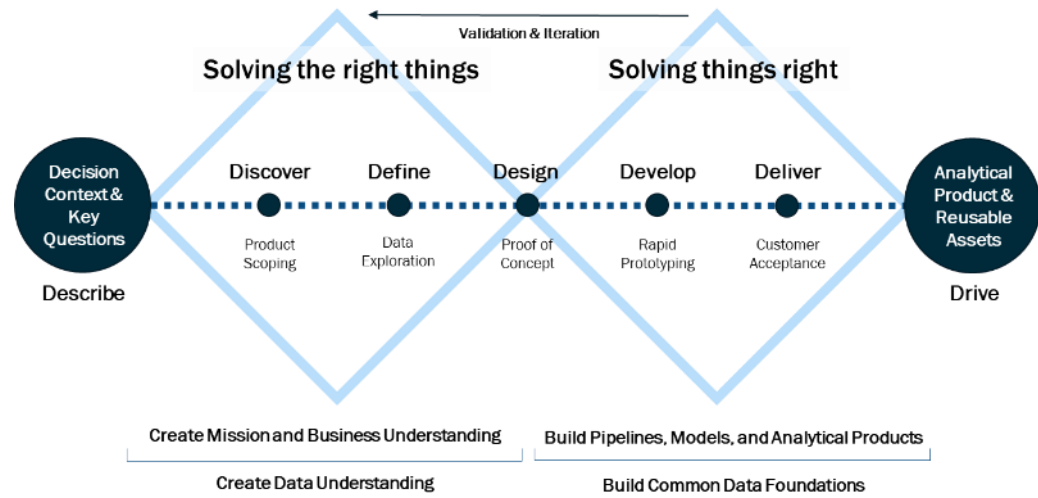


Product Development



Proving Our Processes: Jupiter Pilots

- CRISP-DM
- Data Science Processes
- Human Centered Design
- MLOps Processes



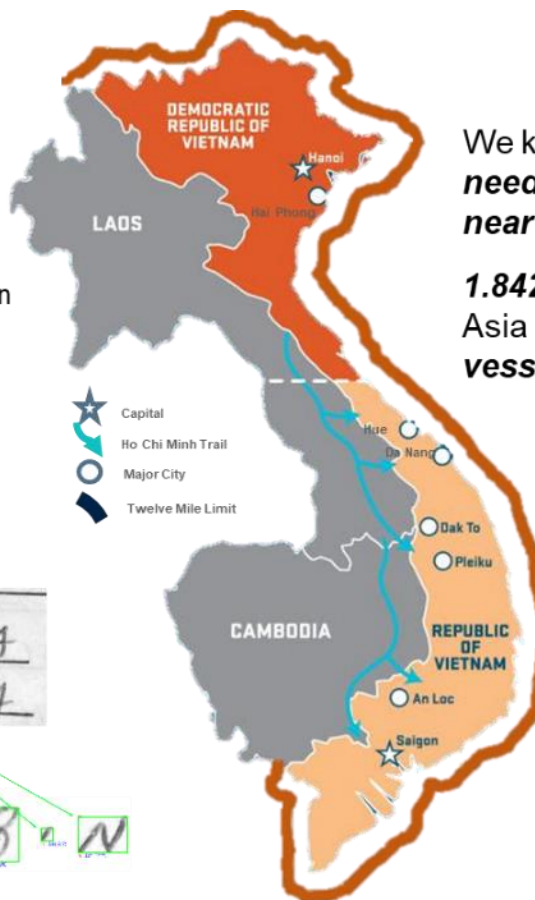
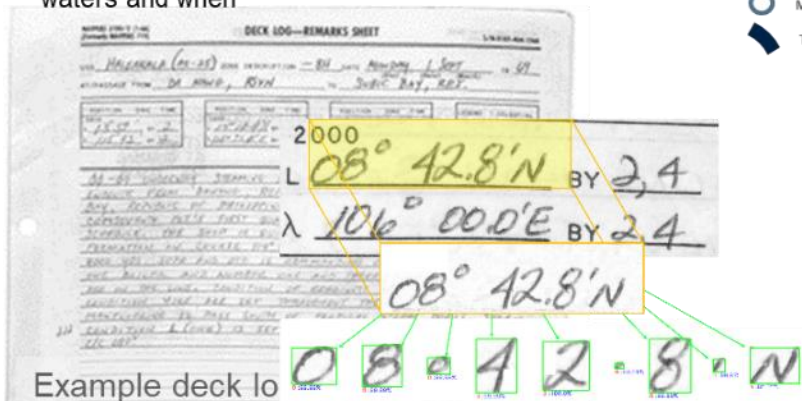
Proving Our Development Pipeline: Blue Water Project

Recent legislation dictates that the VA and the US Navy determine which sailors set foot on Vietnam, **or were within 12NM** and were presumed exposed to Agent Orange

Actions

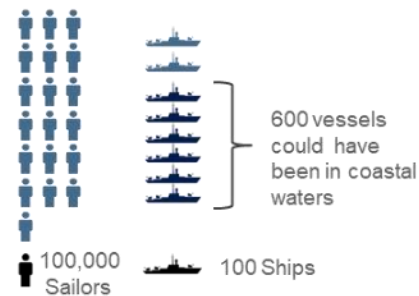
Using deck logs, and machine learning plot the location of every ship during that timeframe to determine if it entered with 12NM of Vietnam.

Create a database of every ship and possibly every sailor that was aboard when the vessel was in coastal waters and when



We know who was ashore, **we need to determine who was near shore**

1.842 million sailors served in SE Asia between **1962-1975** on **600+ vessels**



Proving Our Teaming Structure: Army/Navy AWS DeepRacer

NIWC Atlantic Wins Big in Joint Artificial Intelligence Robotics Competition

05 April 2021

From Heather Rutherford, NIWC Atlantic Public Affairs

CHARLESTON, N.C. - Naval Information Warfare Center (NIWC) Atlantic swept the top five places in the Amazon Web Services (AWS) DeepRacer First Annual Army-Navy Competition.



AWS DeepRacer First Annual (Virtual) Army-Navy Competition, 25 March 2021

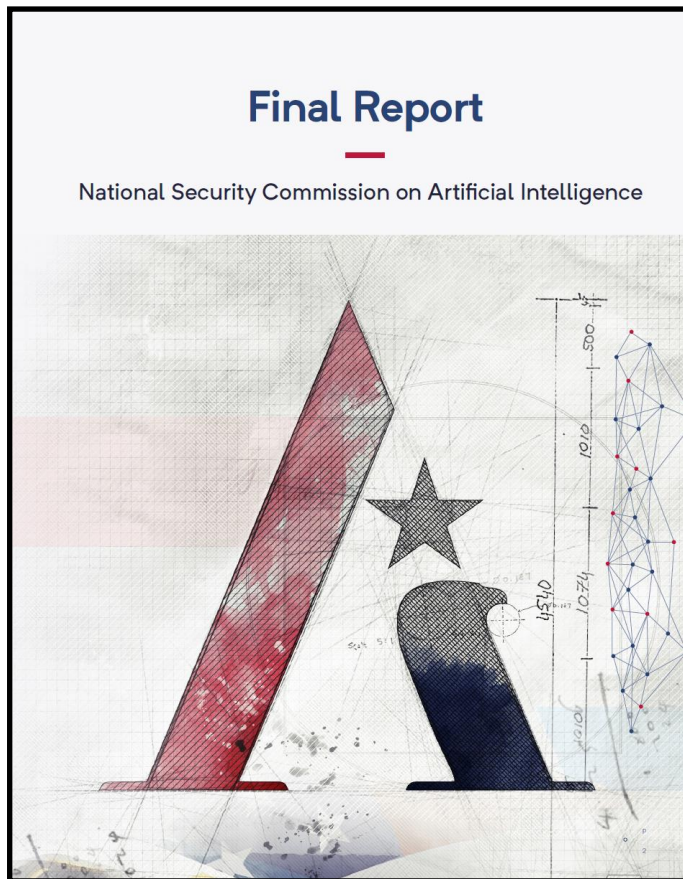
POSITION	RACER	TIME
#1	USN-Keister-DeepBlue5	00:07.112
#2	Navy-A-Winning-Simulation	00:08.169
#3	DeepDrifterWBM (Navy)	00:08.920
#4	LowCountryGeeks (Navy)	00:11.040
#5	Team Vision	00:11.463
#6	Army-Fleshman	00:14.030

- Quickly built seven (7) piloting teams with 3-4 engineers/scientists in two weeks to compete in the 72 hour event
- Four of seven teams and one individual placed in the final Top 5 with their algorithms loaded into a physical DeepRacer vehicle racing on a track

How to Work Lessons Learned

- ▼ AI is not Software
- ▼ Have Standard “Templates”
- ▼ Build a Balanced Team and Keep Them Together
- ▼ You Need to Learn From Your Peers

Well on our way...



“By 2025, the foundations for widespread integration of AI across DoD must be in place. Those foundations include a **common digital infrastructure**, a **digitally literate workforce**, and modern **AI-enabled business practices** that improve efficiency. All are prerequisites to achieving a state of military AI readiness”



Questions ?

Naval Information
Warfare Center



ATLANTIC

Serve our Nation by delivering information warfare solutions that protect national security. WIN THE INFORMATION WAR.



NIWC Atlantic is part of the Naval Research & Development Establishment (NR&DE)

Web: <https://www.public.navy.mil/navwar/Atlantic> Facebook: <https://www.facebook.com/NavalInformationWarfareSystemsCommand>

Twitter: <https://twitter.com/navwarHQ> Instagram: <https://www.instagram.com/spawarhq/> LinkedIn: <https://www.linkedin.com/company/spawar/>

Glassdoor: <https://www.glassdoor.com/Overview/Working-at-SPAWAR-Systems-Center-Atlantic-EI-IE638508.11,41.htm>

Employment opportunities: <https://www.usajobs.gov/> NIWC Atlantic Small Business: <https://www.public.navy.mil/navwar/Atlantic/Pages/ForIndustry.aspx>

NAWWAR Contract Directorate Office: <https://e-commerce.sscno.nmci.navy.mil>