



DEFENSE  
INNOVATION UNIT

# Space Force Fuel **GenAI** **Innovations**

2024





## Table of Contents

- 03 Q&A
- 04 The Space Force Generative AI Challenge
- 06 Bootcamp: Bringing this Innovation Quest to Life
- 08 GenAI Toolkit Powers Space Force Solutions
- 09 Teams Delivered Real Value
- 10 Each Bootcamp is a Gateway to More Innovation

# Q&A

How might we harness the power of AI and apply it to Space Force opportunities in acquisitions, space operations, training, and general business administration?

This was the question central to the DIU Space Force GenAI Bootcamp. The goals of this Bootcamp were to equip Guardians and DoD personnel with human centered design skills and tools, accelerate their ability to use GenAI tools, and empower them to create GenAI solutions to Space Force problem sets.

The heart of this innovation quest included the following questions:

- Why challenge people to learn about Generative AI?
- Why is it important for the Space Force, Guardians, and the DoD personnel to use Human Centered Design and generative AI to solve their own problems and opportunities?
- With a Force that knows how to harness Human Centered Design and generative AI capabilities, what can you now do?



# The Space Force Generative AI Challenge



The United States Space Force invited Guardians and Department of Defense (DoD) personnel to create solutions to Space Force problem statements leveraging Generative AI. This hackathon-style Challenge launched in-person on September 12 simultaneously in 3 Space Force Ecosystems across the country: Los Angeles, Colorado Springs, Washington D.C.

The primary objectives of this challenge were:

**1 Develop People:** learn how Human Centered Design and Generative AI skills prepare you to succeed in the world of tomorrow.

**2 Strengthen the Force:** bring new solutions to life to strengthen existing capabilities, create new capabilities, and create new opportunities to compete and win in a changing world.

To equip Guardians and DoD personnel with the tools and skills to think differently and solve problems, DIU organized and executed a 6-week long Bootcamp in conjunction with the Challenge.

- 5 Teams
- 6 Virtual Bootcamp Days Across Six Weeks
- 7 Human Centered Design Lessons
- 7 AI-Powered Innovation Tools
- 5 GenAI Solutions
- 1 Team Earning Top Recognition via Out-Briefs

Let’s get into how we made it happen.



The DIU Space Force Gen AI Bootcamp was a highly interactive and innovative experience. The program introduced us to cutting-edge methodologies and frameworks for integrating GenAI solutions in practical ways, all within the context of enhancing Space Force operations. Each session encouraged a hands-on approach, where we worked through and leveraged AI tools to address immediate challenges. The collaboration with other Space Force teams and the insights from AI experts were incredibly valuable.”

WUAN PERKINS GS-12, PROGRAM MANAGER, SSC/ACO, MEMBER OF BOOTCAMP TEAM ORBIT





# Bootcamp: Bringing this Innovation Quest to Life

“DIU exists to create networks of innovators that can employ novel and nontraditional methods to solve national security problems, both historical and emerging. The Space Force Generative Artificial Intelligence Challenge afforded DIU the opportunity to leverage several of its programs in support of participating Guardians and DoD personnel. Through the Bootcamp program, which was created to enable the military and DoD civilians to solve their own problems, Challenge participants learned the principles of Human Centered Design (HCD) directly from seasoned startup founders. These lessons enabled them to refine their solution concepts and pitches for the USSF GenAI Challenge.”

DANIEL ZHU, PROGRAM MANAGER, DEFENSE INNOVATION UNIT

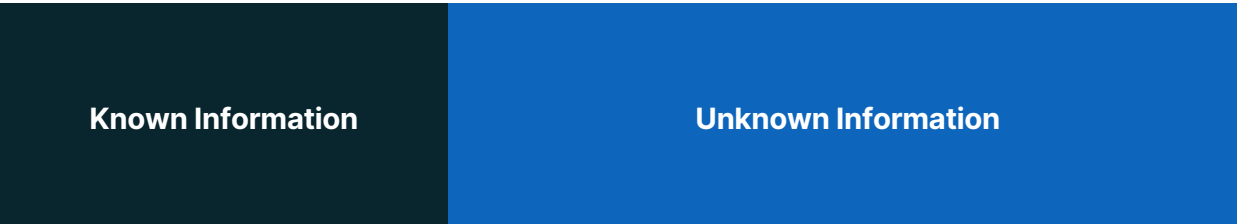


Eager to support this ambitious pursuit, Navi joined the quest to bring this bootcamp to life. The Navi team has started, scaled, and sold multiple startups; built innovation programs at top universities; and won more than 10+ hackathons. Navi has architected its innovation framework through years of helping DoD personnel and organizations start and succeed on their innovation quests.

## Why "Human Centered Design"?

“Innovation” relies on accessing the vast wealth of “unknown informatio” locked within people.

This “unknown information” is unstructured and not instantly accessible—yet it is the bedrock of unearthing the ultimate currency of innocation: “problems”.



This bootcamp combined:

- **Human Centered Design:** learning the principles of Human Centered Design through startup founders and university innovation and entrepreneurship ecosystem builders
- **Generative AI:** learning GenAI fundamentals in order to better describe problems, collaborate with team members, and bring new ideas to life
- **Customers Seeking Solutions:** the USSF sourced 10+ problem sets from across the Force, providing teams with a wealth of inspiration to get started and fuel for “talking to users”



Every innovation quest starts with a problem. The US Space Force did an exceptional job of sourcing more than 10 problem sets with personnel motivated for solutions. That is incredible fuel to spark an innovation journey.”



NIC MELIONES, CO-FOUNDER AND CEO OF NAVI



# GenAI Toolkit Powers Space Force Solutions

Central to this innovation pursuit are the dual skills of Human Centered Design and AI. “Talking to people” (Human Centered Design) is a durable skill set at the heart of innovation. Similarly, the ability to “talk to technology” only continues to accelerate in importance; GenAI technologies unlock new ways to collaborate and solve problems.

Participants accessed 7 AI-powered innovation tools. These tools (custom GPTs) taught innovation skills while helping the teams brainstorm, evaluate, and decide on key elements of their solutions. To accompany each of these tools, we provided participants with a corresponding written GPT prompt. This gave participants the ability to recreate their own version of an innovation tool using their AI platform of choice.

The *Problem Formulas GPT* is one such example from our toolkit. While every innovation quest starts with a problem, it is very difficult to effectively unearth and articulate problems with precision. This custom GPT taught participants key principles of problem solving, all the while helping them define the problem their team intended to address during the bootcamp.

Each AI-powered tool taught an innovation skill while helping teams create their own AI-powered solutions.

The full list of AI-powered tools that teams accessed include:

- Products You Love
- Problem Formulas
- Behavior Map
- Solution Formulas
- Value Transaction Map
- The Pitch
- The Plan



# Teams Delivered Real Value

Here is a brief synopsis of the five bootcamp solutions that Guardians and DoD personnel brought to life:

- Mavericks:** AI-powered S.H.I.E.L.D. checklist to guide program managers and contracting officers through the procurement process.
- Enhanced SDA:** real-time identification of satellites in low-earth orbit.
- OrbIT:** IT ticketing system that improves speed and accuracy by proactively providing self-service solutions for users.
- Deadline Demons:** AI-powered email assistant for composing, replying, summarizing, and organizing emails.
- Heightened Focus:** recommendation and real-time engagement platform to help operators maintain focus and consistently produce at a high level.

Each team pitched their solution to a panel of judges during Bootcamp Out-Briefs. The judges asked questions and evaluated the presentations along several criteria, including Impact, Scalability, and Innovation.

WINNER

ORBIT. Ask ORB: AI-Powered IT Solutions

Letting technology fix technology so warfighters can fight the war.

ORDER ATLAS ENTERPRISE, SPACE SYSTEMS COMMAND, US SPACE FORCE.

Request New Ticket (AC-NW1234535)

Who is this ticket for? Self On Behalf Of

Category: Software Hardware Network Peripherals

Type: VPN Connectivity Troubleshooting

Title: Unable to Connect to CISCO Connect VPN

Description: Enter short title about your request

Submit Request Cancel

Ask ORB

Recommended Solutions

It looks like you're having connectivity issues with VPN. Here's a step-by-step troubleshooting solution for fixing your issue:

Check Internet Connection: Ensure that your device is connected to the internet. You can do this by opening a web browser and trying to access a website.

Restart Device: Sometimes, a simple restart can resolve connectivity issues. Restart your device (computer or mobile device) and try connecting to the VPN again.

Check VPN Settings: Verify that the VPN settings on your device are correct. Check the VPN server address, username, and password to ensure they are accurate.

Try Different Network: If possible, try connecting to a different network (such as a different Wi-Fi network or mobile data) to see if the issue is specific to your current network.

Ask question or provide more information

Ask ORB can make mistakes. Consider checking important information.

Upon completing their deliberation, the judges crowned OrbIT as the bootcamp winner!



# Each Bootcamp is a Gateway to More Innovation

The goal of every bootcamp is to spark the foundation of fantastic ideas while empowering all participants to incorporate the innovation skills and tools into their daily work.

“Capstone is a program that takes real world problems and matches them with around 5 university students who spend their culminating class creating a solution. This initiative will result in 2 plans for a GenAI model, with the top Bootcamp team and the top team from the subsequent Challenge pitch event winning support via Capstone. Via Capstone, these two winning solutions can be fully flushed out and developed to a stage where they can be tested and hopefully turned into a program of record.”

CASSIE HEYMAN-SCHRUM, PROGRAM MANAGER FOR PROBLEM SOURCING AND CREATION, DEFENSE INNOVATION UNIT

Why is it important for the Space Force, Guardians, and the DoD personnel to use human centered design and generative AI to solve their own problems and opportunities?

“Even with generative AI capabilities, Human Centered Design is crucial in understanding a system or process, because ultimately, it is a person that is hindered by the current system and it is a person that stands to benefit from fixing the current system.”

LT COL ALAN LIN, SPACE SYSTEMS COMMAND/ ACQHUB – SSC/ACQ, MEMBER OF BOOTCAMP TEAM ORBIT

Why challenge people to learn about Generative AI?

“It is the person that matters. We want to equip Guardians with the tools and skills to think differently and solve problems. The amount of influence and impact they can have in the Space Force is significant.”

CAPT ALEJANDRO MALDONADO, USMC, AI/INNOVATION LEAD, SATCOM, PROGRAM ELEMENT MONITOR, SAF/SQSS

People are at the heart of innovation: they understand problems, solve them, and use the solutions. Generative AI tools amplify this process by adding speed and clarity, keeping teams focused on what truly matters. Take the *Value Transaction Map*, for example. Innovators often get swept up in their ideas and features. But users only care if those features deliver real value. This AI-powered tool makes it easy to pinpoint what different stakeholders actually value, helping teams move faster and stay aligned on delivering impact.

“I found the Value Transaction Map to be the most constructive tool in our process. It allowed us to clearly distinguish between the team’s desire and the customers’ identified needs, helping us to prioritize and align our efforts with what truly mattered to our end-users.”

LT COL TANISHA SAUNDERS, USSF, ISR PARTNERSHIPS & INTEGRATION DIVISION (S2I), DIRECTORATE OF INTELLIGENCE, SURVEILLANCE, & RECONNAISSANCE (S2), MEMBER OF BOOTCAMP TEAM DEADLINE DEMONS

Innovation is a compounding advantage to solve today’s problems and build tomorrow’s skills.

Start your compounding advantage with a bootcamp.

With a force that knows how to harness human centered design and generative AI capabilities, what can you now do?

“Human-Centered Design equips Space Force, Guardians, and DoD personnel with essential problem-solving skills to address mission-critical challenges independently and effectively. By fostering adaptability, creativity, and a deep understanding of user needs, HCD empowers them to create timely, practical solutions without relying heavily on external support...

Strategically, these solutions empower the Space Force to leverage AI for faster, data-driven insights, ensuring mission effectiveness in complex space environments. Operationally, with Guardians now equipped in Human-Centered Design, they can return to their units to identify and solve problems more efficiently, fostering a culture of innovation and proactive problem-solving within their teams.”

MSGT MIKE SULLIVAN, USSF, FIRST SERGEANT, HQ STARCOM



## AUTHORS

**Daniel Zhu**

*Program Manager (Contractor), Defense Innovation Unit*  
[bootcamp@DIU.mil](mailto:bootcamp@DIU.mil)

**Nic Meliones**

*Co-Founder and CEO of Navi*  
[contact@heynavi.com](mailto:contact@heynavi.com)

## CONTRIBUTORS

### **United States Space Force**

The Space Force organizes, trains and equips personnel in order to protect U.S. and allied interests in space and to provide space capabilities to the joint forces. To that end, the Space Force manages space launch operations at the East and West Coast Space Launch Deltas. These bases provide services, facilities and range safety control to conduct DoD, NASA and commercial space launches.

[www.spaceforce.mil](http://www.spaceforce.mil)

### **Navi Co.**

Navi is the gateway to the innovation economy. Navi's solutions make it possible for people and organizations to start their innovation quests and build an enduring innovation advantage. We do this through bootcamps, accelerators, and our digital coaching platform.

[www.heynavi.com](http://www.heynavi.com)



## About the Defense Innovation Unit

The Defense Innovation Unit (DIU) strengthens national security by accelerating the adoption of commercial technology in the Department of Defense and bolstering our allied and national security innovation bases. DIU partners with organizations across the DoD to rapidly prototype and field dual-use capabilities that solve operational challenges at speed and scale. With offices in Silicon Valley, Boston, Austin, Chicago and Washington, DC, DIU is the Department's gateway to leading technology companies across the country.

[diu.mil](http://diu.mil)