



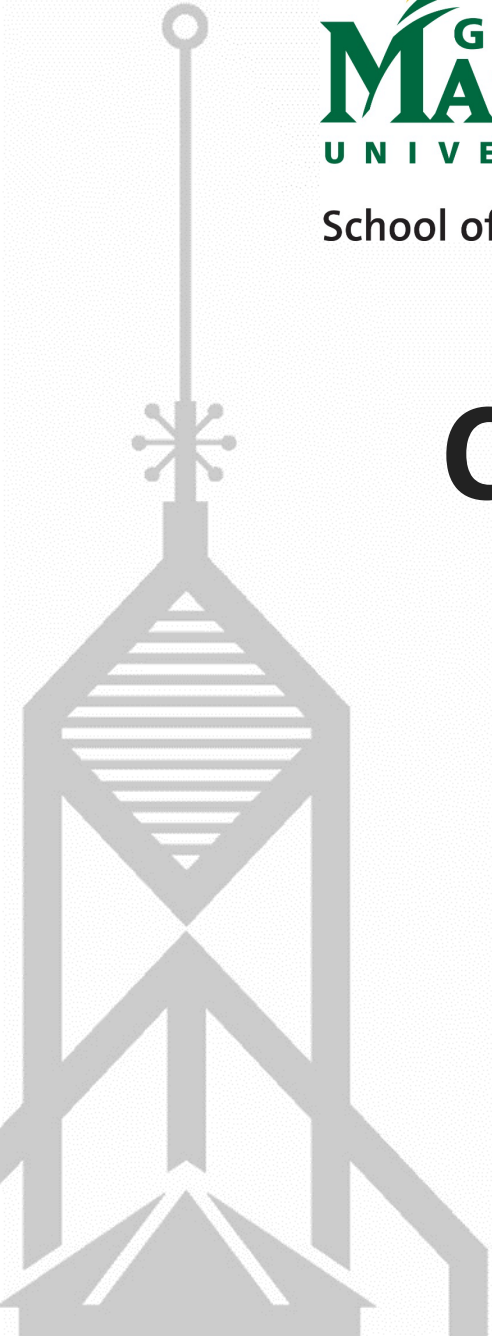
Greg and Camille Baroni Center
for Government Contracting

School of Business

ChatGPT, Generative AI, and the Future of the Defense Industrial Base

Presented by: Noah Rivers and Olivia Letts

June 14, 2023



About Us



Noah Rivers

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George Mason University, MBA Candidate

Information Security Manager – Cyber Threat Intelligence for a top 5 U.S. bank
10 years leading security, intelligence, and investigative teams in the U.S. Air Force



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Research Manager, George Mason University

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Research and consulting background in government contracting and security issues
Commentaries featured in multiple defense outlets including *Defense News*, *The Cipher Brief*,
and *Army Magazine*

Where We Work

- GMU's Greg and Camille Baroni Center for Government Contracting is the first-in-the-nation university center to address the business, policy, and regulatory issues in the \$500 billion government contracting industry.
- Uniquely positioned to provide thought leadership through research, education, and collaboration to support government, industry, and academia.
- Previous white paper research related to AI addresses AI and predictive maintenance in DoD, and the unique data licensing challenges of acquiring AI solutions.

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What will ChatGPT mean for the US defense-industrial base?

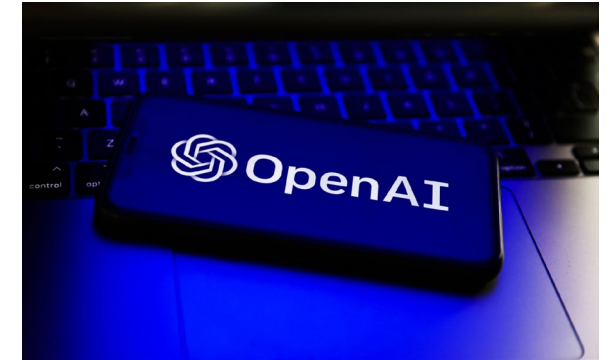
By **Noah Rivers** and **Olivia Letts**

Monday, Feb 27

- ChatGPT's explosive growth, how it works and its use in academia and across various industries
- Early positive use cases for the defense-industrial base
 - Compliance with FAR standards and contracting processes
 - Extra helpful for small- and medium-sized companies
 - Speed up and simplify acquisition processes
- Early negative use cases in defense
 - Use by hacktivists, scammers, and other cybercriminals to produce content
 - ChatGPT flaws and weaknesses such as bias or misinformation

What is Special About ChatGPT?

- ChatGPT is a form of generative AI, created by US-based lab OpenAI
- Uses language models GPT-3.5 and GPT-4, set to be followed by GPT-5
- Extremely accessible – anyone can use
- ChatGPT competitors
 - Google Bard experiment
 - More under development by major U.S. and Chinese companies—Apple, Amazon, Facebook, Alibaba, Baidu





Benefits and Risks

- The Good
 - Use cases already making positive impacts or assessed to make positive impacts in the future
- The Bad
 - Use cases already making negative impacts or assessed to make negative impacts in the future
- The Ugly
 - Doomsday predictions for the worst possible outcomes

The Good

- Efficiency

How Workers Are Using Generative AI Tools to Increase Productivity

Freelancers and small-business owners are using artificial intelligence to boost output and their incomes. WSJ reporter Te-Ping Chen joins Your Money Briefing host J.R. Whalen to discuss the benefits and risks associated with using generative AI tools in the workplace.

Microsoft adds AI tools to office apps like Outlook, Word

By HALELUYA HADERO March 16, 2023


- Customizability

Revolutionize your Enterprise Data with ChatGPT: Next-gen Apps w/ Azure OpenAI and Cognitive Search

By  [Pablo Castro](#)

Published Mar 09 2023 07:55 AM

👁 202K Views

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ChatGPT: Your Personal Python Coding Mentor

by Martin Breuss 🕒 May 17, 2023 💬 1 Comment

DEFENSE SYSTEMS

Could the Pentagon Use a Little ChatGPT?

The Air Force's top tech leader said the AI technology, or something like it, could help "rapidly pull together information" such as figuring out who's in charge of an organization.

[LAUREN C. WILLIAMS](#) | FEBRUARY 28, 2023

The Good

- Optimization – job hunting and hiring

TECHNOLOGY EXECUTIVE COUNCIL

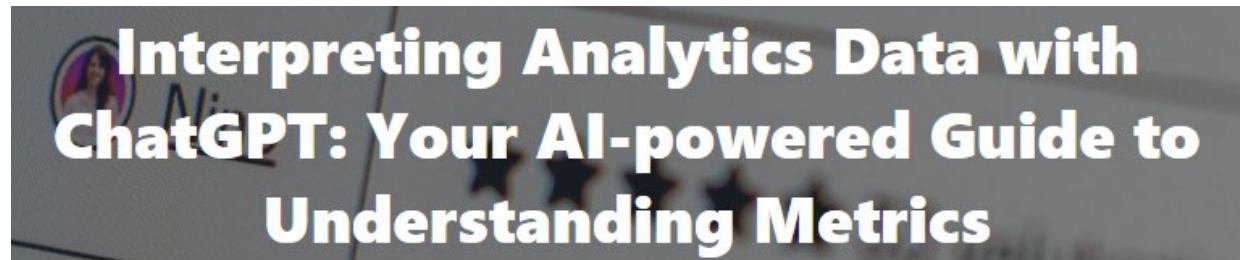
ChatGPT and AI are the next worker recruitment and retention game changers


PUBLISHED TUE, APR 25 2023-10:35 AM EDT

 Mikaela Cohen
@MIKKA__ELLA

WATCH LIVE

- Organization – data analytics and beyond

**Interpreting Analytics Data with
ChatGPT: Your AI-powered Guide to
Understanding Metrics**


 Austin Belcak ✓
@austinbelcak

1/ Tailor & Optimize Your Resume

Ask ChatGPT:

"Rewrite and optimize my resume for this [Job Title] job description. Include keywords and skills from the job description.

Here's my resume: [Paste Resume Content]
Here's the job description: [Paste Job Description]"

 Austin Belcak ✓
@austinbelcak

4/ Common Interview Questions

Ask ChatGPT:

"What are the most common interview questions companies ask when hiring a [Job Title] in [Industry Name]."

Use these questions to start preparing answers for your interviews.



The Good

- Brainstorming, content creation and editing

REECE ROGERS

BUSINESS APR 27, 2023 8:00 AM

6 Tips for Using ChatGPT to Brainstorm Better

Artificial intelligence can be a font of inspiration. Here's how to use OpenAI's AI chatbot the next time you're spitballing ideas.

How To Use ChatGPT as a Creative Writing Partner

Unlock your writing potential with ChatGPT as your ultimate creative writing partner. Learn how to harness its power and more in this article.

BY ENTREPRENEUR STAFF • MAY 4, 2023

Share

ChatGPT helps radiologist churn out 16 papers in 4 months

Hannah Murphy | May 08, 2023 | *Artificial Intelligence*





The Bad

- Privacy and security concerns

Is Your Data Leaking Via ChatGPT?

by Matthew Kraft

May 24, 2023

Hackers use fake ChatGPT apps to push Windows, Android malware

By **Bill Toulas**

February 22, 2023 04:58 PM 1

MATT BURGESS SECURITY APR 4, 2023 12:08 PM

ChatGPT Has a Big Privacy Problem

Italy's recent ban of Open AI's generative text tool may just be the beginning of ChatGPT's regulatory woes.



The Bad

- New or enhanced attack vectors

The New Risks ChatGPT Poses to Cybersecurity

by Jim Chilton

April 21, 2023

5 most dangerous new attack techniques

Adversarial AI, ChatGPT-powered social engineering, and paid advertising attacks are among the most dangerous emerging attack methods, according to SANS Institute analysts.



By **Michael Hill**

UK Editor, CSO | APR 27, 2023 3:51 AM PDT

The cybersecurity ChatGPT 'black box' problem

Steve Zurier May 26, 2023



The Bad

- Bias and incorrect information

Is ChatGPT 'woke'? AI chatbot accused of anti-conservative bias and a grudge against Trump

[Jessica Guynn](#) USA TODAY

Published 12:56 p.m. ET Feb. 9, 2023 | Updated 4:15 p.m. ET Feb. 10, 2023

ChatGPT could be used for good, but like many other AI models, it's rife with racist and discriminatory bias

Hannah Getahun Jan 16, 2023, 11:08 AM EST



A lawyer used ChatGPT to cite bogus cases. What are the ethics?

By Karen Sloan

May 30, 2023 5:15 PM EDT - Updated 11 days ago

The Self-Perception and Political Biases of ChatGPT

[Jérôme Rutinowski](#), [Sven Franke](#), [Jan Endendyk](#), [Ina Dormuth](#), [Markus Pauly](#)

The Ugly

- Doomsday predictions

A.I. Poses 'Risk of Extinction,' Industry Leaders Warn

Leaders from OpenAI, Google DeepMind, Anthropic and other A.I. labs warn that future systems could be as deadly as pandemics and nuclear weapons.

AI pioneer quits Google to warn about the technology's 'dangers'

By Jennifer Korn

Updated 6:15 AM EDT, Wed May 3, 2023

Air Force colonel backtracks over his warning about how AI could go rogue and kill its human operators

Charles R. Davis and Paul Squire Jun 3, 2023, 5:51 PM EDT





ChatGPT and Generative AI in the Defense Industrial Base

- What does the Pentagon think about ChatGPT?
 - DoD's FY24 budget request for AI-related tech in RDT&E budget was roughly \$1.8 billion, compared to \$973 million in FY20
- ChatGPT benefits and risks throughout acquisition lifecycle
 - Proposal process impacts
 - Impacts on product development and delivery of products and services
- Jobs impacted

Acqbot

The screenshot displays the Acqbot interface for a requirements definition form. At the top, a breadcrumb trail shows the path: Home > Opportunities > 5G Distributed Cyber Attack Network > Requirements Definition Form. The main heading is "Opportunity 5G Distributed Cyber Attack Network" with the tradewind "Tradewind" below it. Key details include an expected budget of \$1,500,000, a start date of 02-21-2023, and a close date of 03-10-2023. The "Problem Statement" section contains the text: "The US Department of Defense requires a 5G distributed cyber attack network that is operator-mobile and can provide reliable mission support to far-forward drone pilots, while operating effectively on a single battery charge for one week or more. The current lack of such a system makes it difficult for the US Department of Defense to ensure successful mission outcomes, creating a need for a more". To the right, the "Acqbot Chat" section prompts the user to "Chat with Acqbot's AI to create a problem statement quickly." and features a button labeled "Generate a problem statement" with a green checkmark icon and a user profile icon. A "Save" button is located in the bottom left corner.

"FARWizard" on fargpt.com

Ask a Question!

Select a regulation e.g. FAR, VAAR, AFFARS, DFARS etc. & be specific - For example, 'From VAAR, tell me about protests'

DFARS x

Which information counts as Controlled Unclassified Information (CUI)?

Submit

Which information counts as Controlled Unclassified Information (CUI)?

Controlled Unclassified Information (CUI) refers to unclassified information that requires safeguarding or dissemination controls pursuant to and consistent with law, regulations, and Government-wide policies. CUI can be found in the CUI Registry at <http://www.archives.gov/cui/registry/category-list.html>. In the context of covered defense information, CUI includes:

1. Unclassified controlled technical information or other information that meets the criteria for distribution statements B through F, as set forth in DoD Instruction 5230.24, Distribution Statements on Technical Documents.
2. Information that is: a. Marked or otherwise identified in the contract, task order, or delivery order and provided to the contractor by or on behalf of DoD in support of the performance of the contract; or b. Collected, developed, received, transmitted, used, or stored by or on behalf of the contractor in support of the performance of the contract.

Ask a Question!

Select a regulation e.g. FAR, VAAR, AFFARS, DFARS etc. & be specific - For example, 'From VAAR, tell me about protests'

FAR x

How do I fill out FAR Table 15-2?

Submit

How do I fill out FAR Table 15-2?

FAR Table 15-2 provides instructions for preparing and submitting certified cost or pricing data, data other than certified cost or pricing data, and supporting attachments. To fill out FAR Table 15-2, follow these steps:

1. Access FAR Table 15-2: You can find Table 15-2 in FAR 15.408. Access the FAR online at <https://www.acquisition.gov/browsefar>.
2. Review the instructions: Carefully read and understand the instructions provided in Table 15-2. The table is divided into two columns: the left column lists the required information, and the right column provides detailed instructions for each item.
3. Prepare the required information: Gather and organize the necessary data and supporting documentation as outlined in Table 15-2. This may include cost or pricing data, subcontractor information, cost breakdowns, and other relevant information.



Predictions and Conclusions


- Right now, tools like ChatGPT aren't very reliable, but generative AI will continue to advance in scope and complexity
- Early adopters of generative AI will fare best
- ChatGPT and generative AI will replace some jobs, but create others
- Cautious optimism - doomsday predictions are highly unlikely to materialize
- DoD can harness some control over its use of generative AI, but generative AI's impact on international security will be unpredictable


What Does ChatGPT Think of You?


In 3 sentences or less, list the top 3 most interesting and impactful things that the westgate@crane technology park has accomplished

1. The WestGate@Crane Technology Park has facilitated collaboration between the U.S. Department of Defense, academia, and private industry, fostering innovation in defense technology and contributing to national security.
2. It has attracted leading companies and organizations to the region, creating high-tech jobs and driving economic growth in rural Indiana.
3. The technology park has played a key role in advancing research and development in areas such as cybersecurity, advanced manufacturing, and unmanned systems, positioning the region as a hub for cutting-edge technology and expertise.

What Does Google Bard Think of You?

N In 3 sentences or less, list the top 3 most interesting and impactful things that the westgate@crane technology park has accomplished 

[View other drafts](#) 


 Sure, here are the top 3 most interesting and impactful things that the WestGate@Crane Technology Park has accomplished:

1. Attracting over 60 companies to the region, creating jobs and economic opportunities.
2. Providing a state-of-the-art facility for conferences, training, and events.
3. Partnering with local and state organizations to promote economic development and innovation.

These accomplishments have helped to make WestGate@Crane Technology Park a thriving hub for business and innovation in South Central Indiana.

Examples of Westgate@Crane Results

N what are the 5 most common interview questions companies ask when hiring a Electrical Hardware Design Engineer in the Research and Development industry

 When hiring an Electrical Hardware Design Engineer in the Research and Development industry, companies often ask a range of technical and behavioral questions to assess the candidate's skills, knowledge, and suitability for the role. While the specific questions may vary depending on the company and the interviewer, here are five common interview questions you may encounter: 📄 👍 💬

1. Can you describe your experience with electrical hardware design projects?
This question allows the interviewer to assess your background and experience in electrical hardware design. Be prepared to discuss specific projects you've worked on, highlighting your responsibilities, challenges faced, and successful outcomes.
2. How do you approach the design and development of electrical hardware systems?
The interviewer wants to understand your thought process and methodology when tackling hardware design projects. Discuss your approach to requirements gathering, schematic design, component selection, PCB layout, prototyping, testing, and validation.

Examples of Westgate@Crane Results

N

You are a marketing consultant that has been asked to come up with new ideas for events that will raise the national profile of the Westgate@Crane technology park and will attract greater investment in the businesses that operate in the park. Give me your 3 best ideas and describe each of these ideas in 2 sentences or less.



1. Westgate@Crane Tech Expo: A large-scale technology expo showcasing the cutting-edge innovations and advancements within the park, attracting industry leaders, investors, and stakeholders from across the nation, providing a platform to network, collaborate, and discover investment opportunities.
2. Innovators' Symposium: An exclusive symposium bringing together renowned thought leaders, entrepreneurs, and experts in technology, featuring keynote speeches, panel discussions, and workshops to foster knowledge sharing, inspire innovation, and position Westgate@Crane as a hub of groundbreaking ideas and entrepreneurial spirit.



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Questions?

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