**- MODULE 4 : PUT YOUR CERTIFICATE TO WORK -**

Earning your Google Data Analytics Certificate is a badge of honor. It's also a real badge. In this part of the course, you'll learn how to claim your certificate badge and display it in your LinkedIn profile. You'll also be introduced to job search benefits that you can claim as a certificate holder, including access to the Big Interview platform and Byteboard interviews.

### **Learning Objectives**

* Identify key software applications critical to the work of a data analyst including reference to spreadsheets, databases, query languages, and visualization tools (applications).
* Follow the steps to register for the Big Interview platform
* Describe how to sign up and take a Byteboard interview
* Understand how to claim your Google Data Analytics Certificate badge

PROGRAM WRAP-UP

[DID YOU COMPLETE A CASE STUDY?](https://www.coursera.org/learn/google-data-analytics-capstone/exam/FTPzN/did-you-complete-a-case-study)

[CONGRATULATIONS ON COMPLETING YOUR CAPSTONE PROJECT!](https://www.coursera.org/learn/google-data-analytics-capstone/lecture/f3omO/congratulations-on-completing-your-capstone-project)

[CONNECT WITH GOOGLE DATA ANALYTICS CERTIFICATE GRADUATES](https://www.coursera.org/learn/google-data-analytics-capstone/discussionPrompt/Uw9dp/connect-with-google-data-analytics-certificate-graduates)

[SHOWCASE YOUR WORK](https://www.coursera.org/learn/google-data-analytics-capstone/supplement/WwBuw/showcase-your-work)

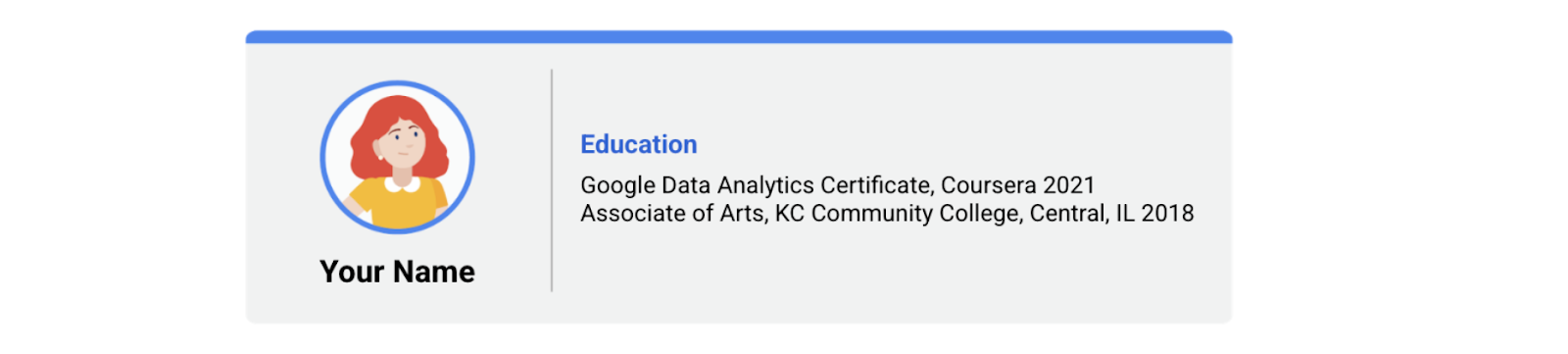
Congratulations on earning your Google Data Analytics Certificate! Now it’s time to let the world know about the skills you gained to help advance your career and share some of the artifacts you created along the way. We recommend adding the completion of this certificate to your resume and LinkedIn profile. Read on and follow these tips to get started.

## **Adding the Google Data Analytics Certificate to your resume and LinkedIn profile**

You may have already started on a data analyst resume earlier in the certificate. If not, there are a variety of digital templates for creating your resume available at [Enhancv](https://app.enhancv.com/industry-examples), [Big Interview](https://googlecerts.biginterview.com/), [Google Docs](https://applieddigitalskills.withgoogle.com/c/middle-and-high-school/en/create-a-resume-in-google-docs/overview.html) or [Microsoft Word.](https://support.microsoft.com/en-us/office/use-a-template-to-create-a-resume-6053fbbb-94d8-471e-9957-49f4e7ab6fb8) You can find additional resume creation guidance in this lesson from Applied Digital Skills: [Start a Resume](https://applieddigitalskills.withgoogle.com/c/college-and-continuing-education/en/start-a-resume/overview.html)

### **Update your Education or Licenses and Certifications section**

* To add the completion of this certificate to your resume, update your ***Education*** or ***Licenses & Certifications*** section.
* To add the completion of this certificate to the ***Licenses & Certifications*** section of your LinkedIn profile, follow the [steps listed in this article.](https://www.linkedin.com/help/linkedin/answer/44644)

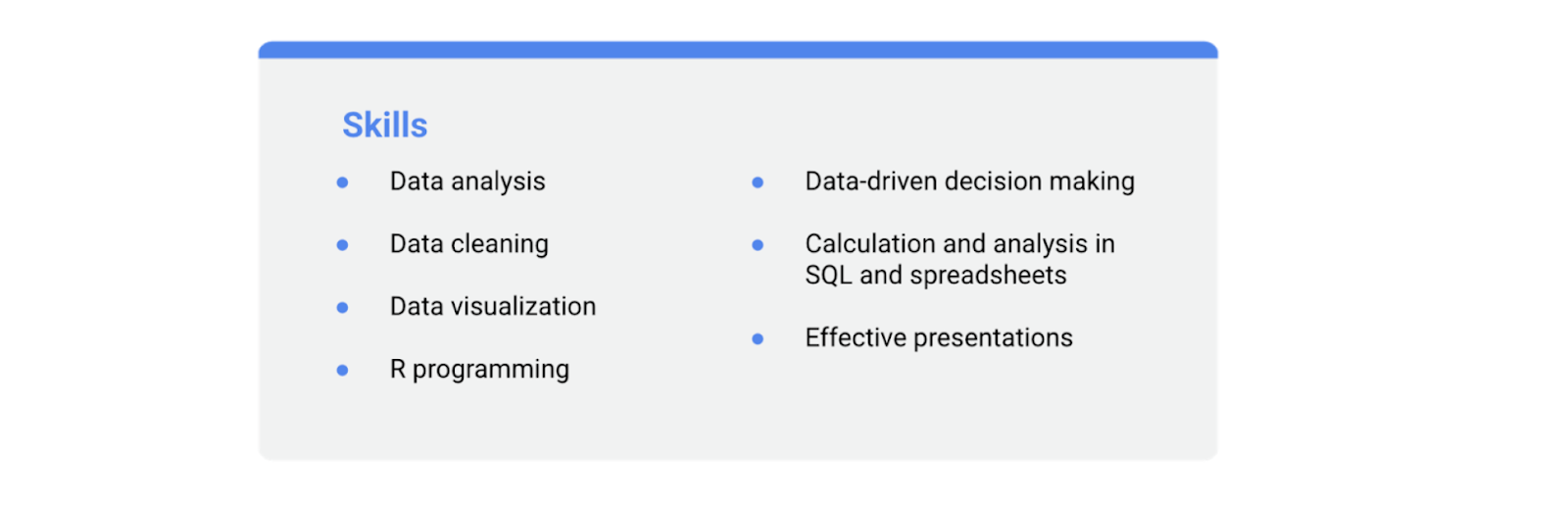


Education: google data analytics certificate, coursera 2021

associate of arts, KC community college, central, IL 2018

### **Update your Skills section**

* If applicable, update the ***Skills*** section of your resume. Below is a comprehensive list of skills that this certificate was designed to help you develop that you could potentially add.
* To update the ***Skills & Endorsements*** section of your LinkedIn profile, follow the [steps listed in this article.](https://www.linkedin.com/help/linkedin/answer/4976)



- Data analysis

- Data cleaning

- Data visualization

- R programming

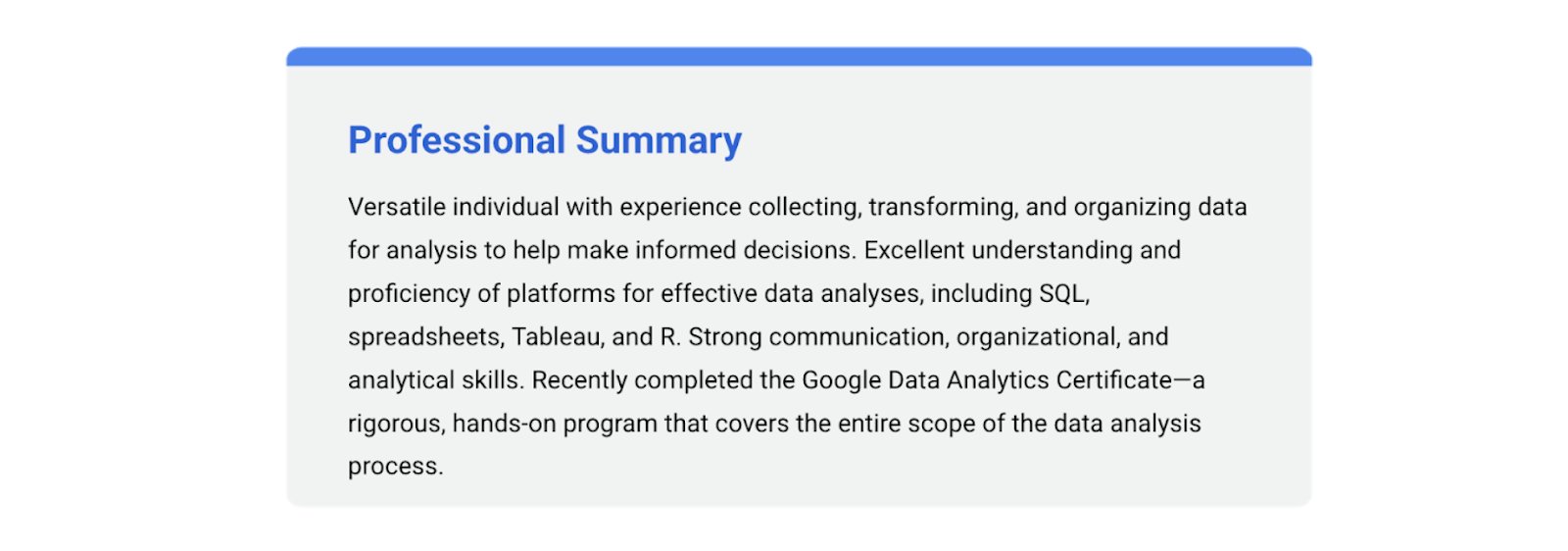
- Data-driven decision making

- Calculation and analysis in SQL and spreadsheets

- Effective presentations

### **Update your Summary or About section**

* If you have a ***Summary*** section in your resume, you can include this certification as a qualification.
* To include a summary that mentions this certification in your LinkedIn profile, update your ***About*** section by following the [steps listed in this article.](https://www.linkedin.com/help/linkedin/answer/92157)



Versatile individual with experience collecting, transforming, and organizing data for analysis to help make informed decisions. Excellent understanding and proficiency of platforms for effective data analyses, including SQL, spreadsheets, Tableau, and R. Strong communication, organizational, and analytical skills. Recently completed the Google Data Analytics Certificate- a rigorous, hands-on program that covers the entire scope of the data analysis process.

### **Add your badge**

Check out the next course item to learn how to claim your certification completion badge and add it to your LinkedIn profile!

[CLAIM YOUR GOOGLE DATA ANALYTICS CERTIFICATE BADGE](https://www.coursera.org/learn/google-data-analytics-capstone/supplement/Cguh4/claim-your-google-data-analytics-certificate-badge)

Learners who complete all courses of this certificate are eligible to earn a digital badge from Credly and Google.

More details are in the FAQs below. For any other questions, including issues with your certificate, please reach out to [Coursera Learner Services](https://learner.coursera.help/hc/en-us).

## **About badges**

### **What is a badge?**

* A badge is a visual representation of a verified credential you’ve earned. In this case, your credential is the Google Data Analytics Professional Certificate! You’ll get a badge upon completion of the program that you can share on platforms like LinkedIn to catch the attention of potential employers.

### **What is Credly and Acclaim?**

* Acclaim is a badging platform that’s part of Credly, a leading digital credential service provider. Acclaim provides badges so that you can easily share your achievements to online destinations like LinkedIn, and employers can instantly verify your skills.

### **How do I add my badges to my LinkedIn profile?**

* Follow the steps in this [Credly article](https://support.credly.com/hc/en-us/articles/360021221491-How-can-I-add-my-badge-to-my-LinkedIn-profile-and-share-to-my-feed-) to add your badge to your LinkedIn. You can also check out this [Vimeo link](https://vimeo.com/725834127?embedded=true&source=vimeo_logo&owner=149323741) for detailed instructions.

## **About the Google badge**

### **How do I claim my badge for completing the Google Data Analytics Certificate?**

* Upon completion of the certificate, you will receive an email letting you know you have earned a badge. From the email, you can choose to claim the badge and opt in to share your information for the purposes of badge issuing. If you decide to claim the badge, Coursera will then send a request to Acclaim to issue your badge. If you don’t have an Acclaim account yet, you will be asked to create one before you can accept and view your badge.
* Please allow at least one week from your date of completion for the system to update. Make sure to check your spam folder just in case it ends up there!

### **I completed the Google Data Analytics Certificate. What do I do if I have not received an email invite to claim my badge?**

* If you’ve waited a week since you completed the certificate and haven’t received an email, please submit a request through the [Acclaim Help Center.](https://support.youracclaim.com/hc/en-us)

## MY BADGE:

## https://www.credly.com/badges/689fb0a7-c94d-438d-9b3a-2208650133dd/public\_url

[SIGN UP TO THE BIG INTERVIEW PLATFORM](https://www.coursera.org/learn/google-data-analytics-capstone/supplement/NVv29/sign-up-to-the-big-interview-platform)

Since preparation is key to nailing interviews and landing a new job, we’ve worked with [Big Interview](https://biginterview.com/), an online interview preparation platform, to create interactive interview tools specifically for data analytics learners like you.

We’re excited to be able to offer you 12 months of free access (originally a $79/month value) as part of the Google Data Analytics Certificate! You’ve earned it.

On **Big Interview** you can:

* Practice answering interview questions in a recorded environment that allows you to get feedback and hone your interviewing skills
* Prepare a resume using their resume-building tool

Follow the steps below to sign up for your **Big Interview** account and start practicing:

1. Go to [googlecerts.biginterview.com/](https://googlecerts.biginterview.com/).
2. Click **Register**.
3. Register with your name, email address, and password.
4. Log in.
5. Go to the **Learn** page.
6. Click **Google Certificates Practice Sets**.
7. Choose **Data Analytics** to begin practicing!

[FROM ALL OF US …](https://www.coursera.org/learn/google-data-analytics-capstone/lecture/k08OP/from-all-of-us)

Congratulations on finishing the program. You should feel so proud of yourself for the work that you put in and the time and effort that it took. There was a lot of information to get through, a lot of work to do and you did it all. Good job finishing up the work. I know it might not have always seemed easy, but you made it to the end. You are well on your way to the next step in your career as a data analyst. That was amazing! You're on your way. I'm so excited to see what you make of your career in data analytics. This is a huge achievement. Oh my gosh, you did it! You've done a fantastic job. Well done. You crushed it. What an awesome job. Way to go! Amazing! Congrats. Congrats. Congratulations! Congratulations! Analysts are amazing. You are now an amazing analyst. You're joining the ranks of folks who explore data to make their world a better place. I am so excited to see what you'll do with this.

[EXPLORE PROFESSIONAL OPPORTUNITIES](https://www.coursera.org/learn/google-data-analytics-capstone/lecture/AsRWZ/explore-professional-opportunities)

We hope you've enjoyed the certificate and that you're excited about all the growth you've experienced, congratulations. Now it's time to take what you have learned and share it with the world. Check out the career resources at the end of the certificate checklist to get started, and you won't wanna miss it. There, you'll find resources to help you discover and prepare for your next job opportunity. Take the time to review the checklist, and take advantage of these exclusive offers. We especially recommend signing up for the job platform linked in the checklist, and creating a profile highlighting your new certificate and the skills you gained.

Hi there, congratulations on completing the Google Data Analytics Certificate. As a next step, consider continuing your business intelligence journey by enrolling in the Google Business Intelligence Certificate. I'm Anita, a Senior Business Intelligence Analyst here at Google, and one of the instructors for the certificate. The Google Business Intelligence Certificate teaches learners how to create processes and information channels that transform data into actionable insights to inform business decisions. For example, I regularly work with partners to create effective dashboards that help them stay on top of trends and anomalies in their business. I also spend a lot of time on designing pipelines that bring together disparate business data into one, user-friendly format. Designed and taught by Googlers, like me, who are experts in the field, this advanced program builds on the foundations of the Google Data Analytics Certificate that you just completed, and helps enhance your technical skills with industry-leading tools, including BigQuery, Tableau, and SQL. The Google Business Intelligence Certificate is hands-on, fully online, and can be completed in one to two months of part-time study. Ready to pursue a career in business intelligence? I'd be happy to help guide you on the next step of your journey when you're ready. Congratulations again!

Hi there, congratulations on completing the Google Data Analytics Certificate. As a next step, consider continuing your data analytics journey by enrolling in the Google Advanced Data Analytics Certificate. I'm Adrian, a customer engineer and data analytics here at Google, and one of the instructors for the certificate. The Google Advanced Data Analytics Certificate will teach you how to use machine learning, predictive modeling, and experimental design to collect and analyze large amounts of data. In my experience, I've used these skills to help predict daily stock prices, fraudulent credit card transactions, and even when an athlete will reach a point of exhaustion or injury in a sports game. Designed and taught by Googlers, like me, who are experts in the field, this advanced program builds on the foundations of the Google Data Analytics Certificate, and helps enhance your technical skills with industry-leading tools, including Jupyter Notebook, Python, and Tableau. The Google Advanced Data Analytics Certificate is hands-on, fully online, and can be completed in three to six months of part-time study. If you're ready to take the next step in your data analytics journey, I'd be happy to help guide you. Congratulations again, keep up the great work. Also, be sure to keep a close eye on your inbox for future career resources and opportunities from Coursera and Google. Best of luck ahead, we're so excited for you.

[EXPAND YOUR DATA CAREER EXPERTISE](https://www.coursera.org/learn/google-data-analytics-capstone/supplement/vSVdo/expand-your-data-career-expertise)

Congratulations again on completing the Google Data Analytics Certificate! By now, you have wrapped up your capstone project, claimed your Certificate badge, and may be exploring new professional opportunities. You might also want to find ways to continue expanding your knowledge. That’s great– a huge part of being a data professional is continuing to learn!

There are two advanced Google Career Certificates that are designed to build on the foundational knowledge you developed in this program: the [Google Business Intelligence Certificate](https://www.coursera.org/google-certificates/google-business-intelligence) and the [Google Advanced Data Analytics Certificate](https://www.coursera.org/google-certificates/google-advanced-data-analytics). If you are interested in growing your career as a data professional, this reading has information about these two advanced Google Career Certificates.

## **Business intelligence versus advanced data analytics**

Business intelligence (BI) uses processes and tools to turn raw data into easy-to-understand, actionable information. For example, creating dynamic and impactful dashboards helps stakeholders gain critical insights into the performance of an organization. The [Google Business Intelligence Certificate](https://www.coursera.org/google-certificates/google-business-intelligence) builds on your data analytics skills and helps unlock more career opportunities. You will practice your skills with hands-on activities using BigQuery, SQL and Tableau.

Advanced data analytics uses math and statistics, programming, artificial intelligence (AI), and machine learning (ML) to uncover insights within an organization’s data structure. These insights can be used to guide stakeholder decision-making and strategic planning. The [Google Advanced Data Analytics Certificate](https://www.coursera.org/google-certificates/google-advanced-data-analytics) will diversify your knowledge of analytics beyond the numbers to develop storytelling, advanced predictive modeling, and visualization techniques. You will complete hands-on activities using Jupyter Notebook, Python, and Tableau.

While both of these fields are concerned with data, they have different interests and approaches to that data:

| **Career information** | **Business intelligence (BI)** | **Advanced data analytics** |
| --- | --- | --- |
| **Job overview** | BI professionals build tangible solutions, such as databases and dashboards, to meet the needs of stakeholders. Stakeholders use these databases and dashboards to make critical business decisions. | Data professionals try various techniques and models to learn about data and generate insights. Stakeholders use these insights to make decisions. |
| **Job titles that you can prepare for with this certificate** | Business intelligence analyst  Business intelligence engineer  Business intelligence developer  Business data analyst  Business analyst | Senior data analyst  Junior data scientist  Data science analyst  Data analytics scientist  Data analytics consultant |
| **Job openings and median salary** | There are over 166,000 open jobs in business intelligence, and the median salary for entry-level roles is $96,000.¹ | There are over 144,000 open jobs in advanced data analytics, and the median salary for entry-level roles is $118,000.¹ |
| **Problem types** | Examples of problems you would solve as a BI professional include measuring performance, tracking revenue or spending, and monitoring progress. | Examples of problems you would solve as an advanced data analytics professional include determining the likelihood for a particular user behavior, predicting events that may happen in the future, and understanding the cause of a problem. |
| **Daily tasks** | BI professionals understand business needs, retrieve and organize data, create data visualizations, and build dashboards and reports. | Advanced data analytics professionals explore large datasets, apply data analysis techniques, and build models in order to find insights from the data. |
| **Carryover from these courses** | If you enjoyed analyzing data to inform decision-making or working with SQL, Tableau, and data visualizations in this certificate program, the Google Business Intelligence Certificate may be a great next choice for you! | If you enjoyed uncovering patterns and trends or working with programming languages and math in this certificate program, the Google Advanced Data Analytics Certificate may be a great next choice for you! |

1Lightcast™ US Job Postings (Last 12 Months: Jan. 1, 2022 - Dec. 31, 2022).

## **Key takeaways**

As you continue your career in the data field, there will be many opportunities to further your learning, including the [Google Business Intelligence Certificate](https://www.coursera.org/professional-certificates/google-business-intelligence) and [Google Advanced Data Analytics Certificate](https://www.coursera.org/professional-certificates/google-advanced-data-analytics). These certificate programs will expand your knowledge and provide you with the technical skills needed to take the next step in your career.

AI FOR DATA ANALYTICS

[INTRODUCTION TO AI FOR DATA ANALYTICS](https://www.coursera.org/learn/google-data-analytics-capstone/supplement/tbCmy/introduction-to-ai-for-data-analytics)

Welcome to the Google Data Analytics Certificate lesson on artificial intelligence (AI). AI tools can help you efficiently analyze data, create compelling visualizations, and gather information to inform decisions. In today's dynamic workplace where leveraging the latest technology is key for productivity and efficiency, having an understanding of AI will boost your career as a data analyst.

Throughout this course, you will:

* Learn foundational concepts of AI.
* Discover AI tools used in the data analytics field.
* Practice using a generative AI tool to complete routine tasks.

As you begin your career as a data analyst, this lesson will give you the basic information you need to experiment with AI tools, identify opportunities for leveraging AI in data analytics, and keep up to date with industry changes.

[AI TOOLS FOR DATA ANALYTICS](https://www.coursera.org/learn/google-data-analytics-capstone/supplement/QBiY0/ai-tools-for-data-analytics)

Because of the capabilities of AI, many data analysts are using it as part of their daily work. AIrefers to computer programs that can complete cognitive tasks typically associated with human intelligence. You can use AI tools to augment and automate general work tasks, such as drafting emails and documents, summarizing information, and helping to analyze data. You can also use it to help complete specific data analytics tasks. For example, you might leverage AI tools to:

* **Prepare data:** AI tools can be used to help prepare data for analysis. For example, AI tools can be used to collect data from different sources and transform the data into a specific format for processing and analysis.
* **Analyze data:** AI tools can analyze large amounts of data to uncover trends, patterns, and relationships. This helps you gather insights from the data to drive informed decision-making. For example, you can use an AI tool to help analyze customer data such as reviews and ratings to help you understand customer preferences.
* **Automate tasks:** AI tools are useful for automating routine or repeated data analysis tasks. For example, an AI tool can help you clean data by identifying duplicate records and missing fields. This frees up time for you to focus on other important tasks, such as preparing to present your data findings to stakeholders.

## **AI tools**

AI tools are continuously evolving and being developed for many industries, including data analytics. While building a career in this industry, you can explore the available AI tools that can assist with your role. One tool that's currently used in data analytics is Tableau AI. **Tableau AI** aims to simplify the process of data analysis. This tool has the potential to help data analysts prepare data, reduce repetitive tasks, and suggest appropriate visualizations.

This is just one example of an AI tool you might use as a data analyst. Throughout this lesson, you’ll learn more ways to use AI tools to enhance your work.

[GENERATIVE AI IN DATA ANALYTICS: PRACTICAL APPLICATIONS](https://www.coursera.org/learn/google-data-analytics-capstone/supplement/yExgD/generative-ai-in-data-analytics-practical-applications)

You’ve been exploring ways that AI can be used in the field of data analytics, such as helping to create data visualizations. Next, you’ll consider how you might use generative AI to complete tasks that you might be responsible for as a data analyst.

In a previous reading, you learned that **AI** refers to computer programs that can complete cognitive tasks typically associated with human intelligence. One specific type of AI is **generative AI**, which is AI that can generate new content, like text, images, or other media. [Gemini](http://gemini.google.com/), [ChatGPT](https://chat.openai.com/) by OpenAI, and [Microsoft Copilot](https://www.microsoft.com/en-us/microsoft-copilot/) are examples of generative AI tools. You can interact with a generative AI tool by typing in a **prompt**, which is input that provides instructions to an AI tool about how to generate output. The tool then creates new content based on that prompt.

In your work as a data analyst, you can leverage generative AI tools to help you complete both practical and creative tasks. Consider these applications of generative AI tools that can help you work more efficiently and effectively:

* **Create content**: Use generative AI tools to generate text, images, and other media. For example, you might create reports, data visualizations, or dashboards featuring data summaries. Generative AI tools can adjust visualizations based on the specific data and insights you want to highlight, enabling you to communicate complex information to stakeholders in an effective and engaging manner.
* **Analyze information quickly**: Generative AI tools can analyze large amounts of content quickly. For example, you might use generative AI to assess the outcome of a recent marketing campaign, helping you analyze campaign data and understand customer sentiment.
* **Answer questions in detailed and nuanced ways**: Generative AI is effective at summarizing information, which makes it useful for research. For example, you could prompt a generative AI tool to provide information about accessibility best practices for data visualizations.
* **Simplify day-to-day work**: Generative AI is also useful for augmenting routine tasks. For example, during the data cleaning process, you could prompt a generative AI tool to help write code to quickly perform data cleaning tasks like filling in missing values, applying consistent formatting, and removing duplicate data.
* **Brainstorm ideas**:AI tools can assist you in brainstorming ideas and conducting research. For example, during the initial phase of the data analysis process, you can leverage AI tools to help you brainstorm potential research questions. This can help you refine and develop a well-defined problem statement for your data project.

The ways you might use generative AI in your work will likely go beyond these examples as the capabilities of AI tools expand and as you continue your own development as a data analyst.

[ACTIVITY: EXPLORE DATA VISUALIZATIONS WITH AI](https://www.coursera.org/learn/google-data-analytics-capstone/assignment-submission/EVSnn/activity-explore-data-visualizations-with-ai)

In this activity, you'll leverage a generative AI tool to help you draft a report for stakeholders.

This activity is optional and will not affect your completion of the course.

### **Scenario**

You’re working as a data analyst at an investment bank specializing in portfolio management. Your current task is to provide portfolio adjustment recommendations for clients. You’ve analyzed the data and are now preparing a report outlining your recommendations to key decision-makers. One key data source you’re using is the S&P 500 stock market index, a significant indicator of US economic health. You need to create a report to help explain the significance of this data to stakeholders, but aren’t sure which type of visualization would be most helpful. You decide to use a generative AI to provide some recommendations.

### **Activity Tools**

In this activity, you will use a browser-based generative AI tool, such as Gemini, ChatGPT, or Microsoft Copilot. Instructions in this activity will refer to Gemini, but you can use the generative AI tool of your choice.

### **Step 1: Access the template and supporting materials**

The following template and supporting materials will help you complete this activity. Keep them open as you proceed to the next steps.

To use the template and supporting materials for this course item, click the following links and select *Use Template*.

Link to activity template: [Prompt an AI tool](https://docs.google.com/document/d/1AT8P4y6R5oGd_bu-ZYE7uI-3AHJgdLeXwQYLd4IEscs/template/preview?resourcekey=0-rulHUgK_DcQazAXeiZHagQ#heading=h.4n68u9enaw05)

Link to supporting materials: [Prompt engineering best practices](https://docs.google.com/document/d/1mkB3k5UKhF8oe3usc50nlCkCctorrURD8omVBMClFjE/template/preview#heading=h.9oge1cab2l18)

OR

If you don’t have a Google Account, you can download the template and supporting materials directly from the following attachments.

[Prompt an AI tool](https://d3c33hcgiwev3.cloudfront.net/_bdrm_yCRIKUAyloXAXa0w_7c67934975534451a6210ab6ac0cdaf1_Prompt-an-AI-tool.docx?Expires=1723852800&Signature=dLHcbONJ6mAlVrXyae~a2Zw4UVpkP6fMeFeuT4nC-T0PqLfyDfAQgJJiRVPp90HAoIiGAvkmym5~QbxE3N8vNSfBnQZZXQvuskn-WlF1uibVWD4QcMZGuZlEHgyB9HqcBR00EkQIZAeLWpvUOo9FVk04MOXdxSKYcrMHFJEKcVM_&Key-Pair-Id=APKAJLTNE6QMUY6HBC5A)

[DOCX File](https://d3c33hcgiwev3.cloudfront.net/_bdrm_yCRIKUAyloXAXa0w_7c67934975534451a6210ab6ac0cdaf1_Prompt-an-AI-tool.docx?Expires=1723852800&Signature=dLHcbONJ6mAlVrXyae~a2Zw4UVpkP6fMeFeuT4nC-T0PqLfyDfAQgJJiRVPp90HAoIiGAvkmym5~QbxE3N8vNSfBnQZZXQvuskn-WlF1uibVWD4QcMZGuZlEHgyB9HqcBR00EkQIZAeLWpvUOo9FVk04MOXdxSKYcrMHFJEKcVM_&Key-Pair-Id=APKAJLTNE6QMUY6HBC5A)

[Prompt engineering best practices](https://d3c33hcgiwev3.cloudfront.net/Lja9dPMYTFal3wz5Y8YJNQ_0856d62e35d54a86a80a46288144bef1_Prompt-engineering-best-practices.docx?Expires=1723852800&Signature=JPn2YctVip0taucI15qnL-cEHWpz3wXXK38yC7bE7xdHpS34IFomNlS1fCuH89t60B4LmIVTKGDxakna87sfvwDTT2WNusvAeOXnyuqM6s5PRZAGOfRDbyXf~Hnb3~eSVKrE-N9hRMmJpl6mKrgftpgSaW6BzNv17ojicooeF0U_&Key-Pair-Id=APKAJLTNE6QMUY6HBC5A)

[DOCX File](https://d3c33hcgiwev3.cloudfront.net/Lja9dPMYTFal3wz5Y8YJNQ_0856d62e35d54a86a80a46288144bef1_Prompt-engineering-best-practices.docx?Expires=1723852800&Signature=JPn2YctVip0taucI15qnL-cEHWpz3wXXK38yC7bE7xdHpS34IFomNlS1fCuH89t60B4LmIVTKGDxakna87sfvwDTT2WNusvAeOXnyuqM6s5PRZAGOfRDbyXf~Hnb3~eSVKrE-N9hRMmJpl6mKrgftpgSaW6BzNv17ojicooeF0U_&Key-Pair-Id=APKAJLTNE6QMUY6HBC5A)

### **Step 2: Access Gemini**

In this activity, you will use a conversational AI tool. You can do this in a browser-based tool like Gemini, ChatGPT, or Microsoft Copilot. Instructions in this activity will refer to Gemini, but you can use the conversational AI tool of your choice.

To access Gemini:

* Go to [gemini.google.com](http://gemini.google.com/).
* Sign in to your personal Google Account.

Refer to the resource about how to [Create a Google Account](https://support.google.com/accounts/answer/27441?hl=en), if you don't already have one. For further assistance signing into Gemini, please refer to [Gemini Apps Help](https://support.google.com/gemini/answer/13278668?hl=en&ref_topic=13194540&sjid=8918468690945255816-NA&visit_id=638435228741836159-1294090182&rd=1).

* For more details on using Gemini, such as who can use Gemini, Gemini’s Privacy Notice, and where Gemini is currently available, refer to the [Gemini Apps FAQ](https://gemini.google.com/faq).
* Please don’t enter private or confidential information in your Gemini conversations or any data you wouldn’t want Google to use to improve its products, services, and machine learning technologies.

### 

### **Step 3: Prompt Gemini to list different types of data visualizations**

A prompt is input that provides instructions to an AI tool about how to generate output. You can prompt Gemini using text or speech and can phrase your prompts in a variety of ways. Your prompt should provide clear and specific instructions that will guide the tool towards generating a targeted response.

To get started, type or speak this prompt or something similar into Gemini:

* *I have a dataset with the daily closing prices for the S&P 500 over the course of the last year. Provide a list of the most applicable types of data visualizations to help me illustrate which sectors of the economy are performing best.*

Then type or copy and paste your prompt into the Prompt section of the Prompt an AI tool template.

### **Step 4: Review the output**

Copy and paste Gemini’s output into the Output section of the template. Sometimes, Gemini may offer multiple responses. You can choose the one that most closely meets your needs.

Then, carefully review the output to ensure it is factually correct, specific, and detailed enough for your data visualization. As you review the output, consider the following questions:

* Is the output accurate?
* Is the output unbiased?
* Does the output include the information I need?
* Is the output relevant to my project or task?
* Is the output consistent if I use the same prompt multiple times?

Reflect on the ways in which the output can better meet the goals of your data visualization. For example, perhaps the data visualization recommendations are not specific to the financial industry.

Then, in the Notes section of the template, list at least two ways that the output could better meet your needs.

### **Step 5: Provide specific follow-up requests**

Working to refine your prompts and provide more context can help the generative AI tool produce clearer, more specific, and more useful information. Think of this process as having a conversation with someone, where they tell you something and then you respond by asking for more information or context. Engaging in a back-and-forth dialogue with generative AI tools can lead to more personalized and effective output. And issuing follow-up requests can help produce content that better aligns with your needs.

Review the guidelines in the [Prompt engineering best practices](https://docs.google.com/document/d/1mkB3k5UKhF8oe3usc50nlCkCctorrURD8omVBMClFjE/template/preview#heading=h.9oge1cab2l18) document and refer to the notes you listed in Step 4 about how Gemini’s output could better meet your needs. Then, review the following examples, which demonstrate how a prompt could be iterated upon to produce a more useful output, and implement at least two of these best practices to add follow-up requests to your original prompt:

* Add a verb. It's helpful to include a verb in your prompt to produce useful output for your intended task. The provided prompt already includes a verb, but using a different verb like “create” or “construct” would give you a different output.
  + For example: *Recommend different types of data visualizations that would be effective for a financial report using the S&P 500 stock market index as the data source.*
* Add context. Supply more information about the task to help the tool provide better results.
  + For example: *I'm a data analyst creating a financial report for investors. I need to determine the most effective type of data visualization to use in my report.*
* Add a specific goal. Include the final goal or specify the outcome that you need. For instance, you could specify that you want to explain the significance of the data to key decision-makers at your company.
  + For example: *The visualization should be tailored to financial investors focused on buying and selling stocks from the S&P 500.*
* Reflect on whether you should format your results: Give specific instructions for how to return the output, such as in a numbered list or ordered by priority.
  + For example: *Provide a bulleted list of data visualization recommendations.*
* Provide a persona. Ask the AI tool to take on the persona of a data analyst or another professional in the field. Giving the tool a persona may help it provide specific examples—separate visualizations for different stakeholders—within the context of your prompt.
  + For example: *Answer as if you are a data analyst.*
* Specify the tone or audience. Ask the AI tool to tailor its response to a specific audience. You might consider audiences you don’t often interact with, such as senior stakeholders or other relevant audiences.
  + For example: *Provide a recommendation for a data visualization for a key decision-maker at an investment bank.*
* Supply examples. Demonstrate the kind of output you’re hoping for.
  + For example: *For each data visualization recommendation, provide a use case for how a financial investor can use it. For example: "A line graph can help investors analyze the movement of financial data over time by toggling between months and years."*
* Specify length. Ask for a short or long output to give the tool an idea of the desired length of the response.
  + For example: *Make sure the recommendations include 3-5 examples of data visualizations commonly used in financial reports.*

Reflect on the ways in which the iterated output meets your goals. The objective is not to get the perfect output, but to get enough information for you to work with. Be sure to always check your output before using it.

In the Observations section of the template, list at least two ways that you iterated on your prompt with follow-up requests and describe how those iterations made the output meet your goals more closely.

[KEY TAKEAWAYS FROM AI FOR DATA ANALYTICS](https://www.coursera.org/learn/google-data-analytics-capstone/supplement/jvhnW/key-takeaways-from-ai-for-data-analytics)

In this lesson, you learned about AI and how it can help you as a data analyst. Then, you practiced working with a generative AI tool and experimented with prompting to generate useful output.

After this introduction to AI, you can continue to experiment with generative AI tools to brainstorm ideas, boost your productivity, help you avoid mistakes, and aid in your decision-making process. Throughout the Google Data Analytics Certificate and beyond, consider experimenting with Gemini to find out more about these topics, and continue your AI learning journey.

## **Key takeaways**

### **AI in data analytics**

AI is rapidly changing the data analytics field. As a data analyst, you can boost your career by understanding this powerful technology and how to leverage it in your daily work. While you continue to develop expertise in this profession, remember that:

* Understanding and using AI is important for your future success as a data analyst, as AI tools become more commonly used in the field.
* AI tools can help you perform tasks such as preparing data, analyzing large amounts of data, and automating routine data analysis tasks.

### **Generative AI in data analytics**

Generative AI is a type of AI that’s capable of creating new content. You can leverage generative AI tools to complete practical and creative tasks. As a data analyst, you might use generative AI tools to:

* Create content, like reports, data visualizations, and dashboards featuring data summaries and other key data insights.
* Analyze and summarize large amounts of information, like marketing campaign data.
* Answer questions you have about data visualizations, like how to incorporate accessibility best practices.
* Simplify daily tasks involved in data cleaning processes, like removing duplicate data.
* Brainstorm ideas and conduct research during the data analysis process.

### **Use AI responsibly**

AI tools have their share of limitations. To use AI responsibly, ensure that you:

* Review AI outputs carefully.
* Disclose your use of AI.
* Consider the privacy and security implications of using AI.
* Consider the effects of using AI.

## **Resources for more information**

If you’re interested in learning more, please visit the following resources:

* [**The Data Cards Playbook**](https://sites.research.google/datacardsplaybook/)**:** Leverage this toolkit for transparency in AI dataset documentation.
* [**Stanford Institute for Human-Centered Artificial Intelligence**](https://hai.stanford.edu/)**:** Explore research focused on developing AI technologies inspired by human intelligence.
* [**All Things Generative AI**](https://generativeai.net/)**:** Delve into a more comprehensive introduction to generative AI, which includes examples of the kind of content that this type of AI can generate, along with links to a few other popular generative AI tools.
* [**Global Trends 2040: A More Contested World**](https://www.dni.gov/index.php/gt2040-home/gt2040-structural-forces/technology)**:** Investigate how technological trends, including AI, are expected to transform the world over the next 20 years in this publication from the U.S. Office of the Director of National Intelligence.
* [**Science & Tech Spotlight: Generative AI**](https://www.gao.gov/products/gao-23-106782)**:** Discover why generative AI systems matter in today’s world in this article by the U.S. Government Accountability Office (GAO).
* [**There’s More to AI Bias Than Biased Data, NIST Report Highlights**](https://www.nist.gov/news-events/news/2022/03/theres-more-ai-bias-biased-data-nist-report-highlights#:~:text=Bias%20in%20AI%20systems%20is,systemic%2C%20institutional%20biases%20as%20well.)**:** Examine the risks involved when bias is present in AI data and recommendations for mitigating these risks, based on research performed by the National Institute of Standards and Technology (NIST), U.S. Department of Commerce.
* [**What is Artificial Intelligence (AI)?**](https://cloud.google.com/learn/what-is-artificial-intelligence)**:** Explore Google Cloud’s introduction to AI, including other cases when AI can be used, such as in speech and image recognition.

[INTRODUCING GOOGLE AI ESSENTIALS](https://www.coursera.org/learn/google-data-analytics-capstone/lecture/u0ApF/introducing-google-ai-essentials)

[TAKE THE NEXT STEP WITH GOOGLE AI ESSENTIALS](https://www.coursera.org/learn/google-data-analytics-capstone/supplement/xa2Kd/take-the-next-step-with-google-ai-essentials)

Congratulations on completing the AI for data analytics lesson! You've explored foundational AI concepts, AI tools, and practical applications of generative AI — and this is just the beginning!

If you’re ready to hone your skills and take your AI expertise to the next level — the Google AI Essentials course is the perfect next step!

[**Google AI Essentials**](https://www.coursera.org/learn/google-ai-essentials?utm_medium=sem&utm_source=gg&utm_campaign=B2C_NAMER_google-ai-essentials_google_FTCOF_learn_country-US-country-CA&campaignid=21236345441&adgroupid=164614892067&device=c&keyword=google%20ai%20essentials%20course&matchtype=b&network=g&devicemodel=&adposition=&creativeid=697863018869&hide_mobile_promo&gad_source=1&gclid=Cj0KCQjw0_WyBhDMARIsAL1Vz8s1l186GIRMCcSWV4KKLmoSqHw94e76-8710eny44cBQQxAabTrf7EaAi8BEALw_wcB) is a self-paced course designed to help people across roles and industries get essential AI skills to boost their productivity, zero experience required. The course is taught by AI experts at Google who are working to make the technology helpful for everyone. In under 10 hours, they’ll do more than teach you about AI — they’ll show you how to actually use it in your day-to-day work.

* Stuck at the beginning of a project? You’ll learn how to use AI tools to generate ideas and content.
* Planning an event? You’ll use AI tools to help research, organize, and make more informed decisions.
* Drowning in a flooded inbox? You’ll use AI tools to help speed up those daily work tasks like drafting email responses.

You’ll also learn how to write effective prompts and use AI responsibly by identifying AI’s potential biases and avoiding harm. After you complete the course, you’ll earn a certificate from Google to share with your network and employer. By using AI as a helpful collaboration tool, you can set yourself up for success in today’s dynamic workplace — and you don’t even need programming skills to use it.