

The fast-paced growth of technological marvels such as Chat GPT and self-driving cars, is full of exciting and innovative career opportunities in artificial intelligence (AI). This technology has ushered in the fourth Industrial Revolution, an era driven by smart automation and increasing connectivity. So why can't YOU be leading this change?

Artificial intelligence engineers are responsible for developing, programming and designing the complex networks to function like a human brain. This role requires combined expertise in software development, programming, data science and data engineering.

Throughout this Expedition, you will find changemakers whose stories resonate with you and that you will **LEAD YOUR LEARNING** by fully engaging with the resources and activities. You will be asked to -



- **REFLECT** about your skills, learning goals, and purpose
- **STRETCH** your knowledge and skills through active learning
- **INNOVATE** and iterate solutions for real-world challenges
- **SHOWCASE** your innovations and learning in a dynamic way

We encourage you to utilize our [Expeditions Idea Book](#) as you navigate this Expedition as a resource and space to get your creativity flowing, organize your ideas and research, and share your innovations and reflections.



Every so often you may see this briefcase icon. That indicates an opportune time to have a conversation with a mentor or local business leader to discuss industry trends, ideate solutions, solicit feedback, and/or present your project. (Speak to your educator if you need support making contact.)

## REFLECT

As you watch the video, think deeply about these questions:



- Which application of AI interests you the most?
- How is AI filling gaps or extending human knowledge or capacity?
- How can the same applications of AI be used in other industries?

Hear these AI engineers describe this exciting career from RTX, a NAF Industry Partner

## WHY A CAREER IN ARTIFICIAL INTELLIGENCE ENGINEERING?



AI Engineers develop, program and train the complex networks of algorithms in ways that can simulate a human brain. They need to have knowledge of software development, programming, data science and data engineering.

According to the U.S. Bureau of Labor Statistics, the potential for earning and growth in this career is significantly higher than many other industries. Check out these statistics:

**\$130K+**

median annual wage

**21%**

projected growth through 2031

**3,300**

projected job openings every year through 2031



*Whose expertise can you tap into to learn more about this career? Could they participate in an informational interview with you and your peers or serve as a mentor?*

Meet Timnit Gebru, a computer scientist who wants to break down the power structures that use AI to exploit communities. If you would like to learn more about her, [check out her LinkedIn page!](#)



Photo credit: Kimberly White/ Getty Images for TechCrunch



## WHICH AI IS BEHIND YOUR FAVORITE TECH?

- Chatbots like Chat GPT: **Interactive AI** automate communication can answer pre-built questions or simulate human like conversations.
- Transcribe - Speech to Text: Siri and apps like Transcribe - Speech to Text use AI but this particular app uses **Text AI** to turn any voice or video memo into a transcription in 120+ different languages and dialects.
- Tesla: **Functional AI** analyzes a huge amount of data looking for patterns to complete complex tasks.

## STRETCH

Expand your knowledge and skills by trying some of these activities:

- Watch [the Future of AI](#) with Robert Downey Jr, aka Tony Stark/Iron Man.
- Take a virtual tour of the [Durham College's AI/HUB](#).
- Check out [IBM's free SkillsBuild](#) lessons and resources in AI.
- Learn about the debate "[Are Robots Taking Over Our Jobs?](#)" by reading the background material in the activity. Choose a side and talk to a family member or friend and make your stance known.
- Take a look at [15 of the best AI summer camps](#) for high schoolers.

What are some other resources you can find that relate to your interests in AI?



**Google**  
Applied Digital Skills

Learn job-ready skills from anywhere with Google's video- and project-based lessons, free of charge. No tech experience is required. Click [HERE](#) to learn more.

Mentors could speak to how AI has changed their job/company/industry, where they see this going in the future, or the overall impacts.



Learn artificial intelligence concepts using Quick, Draw!, AutoDraw, Google Translate, and Google Slides with the lesson [Discover AI in Daily Life](#).



## STRETCH

Expand your knowledge and skills by exploring some of these resources:

### THE ENGINEERING DESIGN PROCESS

As you think about problems to solve and what to innovate, be sure to implement the engineering design process. Even if you are not planning to be an engineer, this process and its different phases help with problem-solving, generating creative ideas, and communicating your project.

Check out the graphic below or watch [this video from Discover Engineering](#).



## THE ENGINEERING DESIGN PROCESS





## INNOVATE

Identify a problem in your community (school, local, state, or global) or this industry, then innovate ways solve it.

|                                 |   |
|---------------------------------|---|
| <p><b>DEVELOP A PRODUCT</b></p> | <p>Create a new product (digital or non-digital) that would solve the problem you have identified. (Consider designing, wireframing, or prototyping using platforms like <a href="#">Lucid</a>, <a href="#">ProtoPie</a>, or <a href="#">Figma</a>, or code an app in <a href="#">MIT App Inventor</a>.)</p>  |
| <p><b>FIX A FLAW</b></p>        | <p>Perform some user testing on an existing product and think of ways to remix and improve it for diverse users. Is there a practice or product that has a flaw you'd like to fix? Consider diverse users, then use that feedback to improve and recreate a product.</p>  |
| <p><b>BE A CHANGE-MAKER</b></p> | <p>Create a movement at your school or community to amplify this industry or the skills sets needed to succeed in this field. You can start a chapter for a Career &amp; Technical Student Organization (CTSO) or professional organization related to this field, host a college/career fair or local competition to highlight this industry. How about doing community outreach about AI for good? The possibilities are endless!</p> |



### PRO TIPS:

- If the choices above don't appeal to you, you can create-your-own or generate ideas by exploring hackathon sites like [hackclub](#) or [devpost](#).
- As you ideate, consider using [customer journey mapping](#).



*Is there a mentor or industry partner who can discuss the Engineering Design Process or UX Design Process to support your innovation? How can you gather mentor feedback as you iterate and innovate?*





## SHOWCASE

Once you complete your innovation, share your learning with the with an audience in one or more of these ways:

*Why not plan a showcase where you and your peers can share presentations with the whole school, at a parent night, or for a panel of industry professionals?*



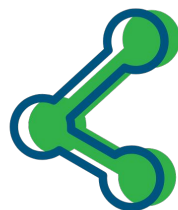
|                           |  |
|---------------------------|--|
| DIGITAL PORTFOLIO OR SITE | Create, code, or build a simple webpage to highlight your innovation, project, and learning journey. Consider bulb digital portfolios, Replit, GitHub, Google Sites, or Wix. Once it's developed, present it to an audience, and solicit feedback. |
| ONLINE MEDIA              | Create a blog, vlog, or social media campaign (LinkedIn, YouTube, etc.) to highlight your innovation, project, and learning journey. Feel free to tag @nafcareeracads.   |
| PITCH IT!                 | Pretend your audience is a group of investors. Pitch your innovation to them, sharing what you learned in the process. Allow for a Q&A, then solicit feedback on the quality of your project and/or pitch.   |

### PRO TIPS:



- Level up your project by entering a school or district competition or challenge. (Think the science fair, CTSOs, hackathons, etc.)
- Not interested in options from our Showcase menu? You can present your creations in a format of your choosing.

### STUDENTS, SHARE YOUR INNOVATION!



NAF would love to see your creation! After you get your educator's permission, submit yours [HERE](#). We may highlight you on social media!

(We WILL NOT share your work without your educator's and your approval.)