This Expedition highlights professions in Artificial Intelligence (AI) Computer Vision by sharing the latest trends, engaging activities, and opportunities to innovate to inspire you to navigate towards this kind of career!

Throughout this Expedition, you will *LEAD YOUR LEARNING* by fully engaging with the resources and activities. You will be be asked to –

REFLECT   STRETCH

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INNOVATE   SHOWCASE

➤ **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:

Meet Aamir Husain, an engineer who's bringing robotics to Verizon's 5G+MEC infrastructure to create a smarter, more connected future. Aamir will share insights about different careers and what's new in the world of AI or Computer Vision.

NAF EXPEDITIONS in collaboration with **verizon√**

COMPUTER VISION

AAMIR HUSAIN

a robotics engineer from Verizon's 5G+MEC infrastructure

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➤ What part of Aamir's story is similar to yours?

➤ What interests you about his journey, career, or role?

➤ What else would you like to learn about AI, machine learning, and Computer Vision?

WHAT IS COMPUTER VISION?

Computer Vision is a field of AI that enables computer systems to capture digital images, video and other visual input and then derive meaning from that data, so it can make recommendations based on the captured information.

WHY A CAREER IN AI COMPUTER VISION?

The salary potential in this industry is quite significant! Check out the median yearly salary for different careers in Computer Vision:

$94K	$94K	$104K	$107K	$121K	$154K
data scientist	business intelligence developer	CV engineer	AI research scientist	software developer	robotics engineer

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?

DID YOU KNOW?

MYTHS VS FACTS FOR CAREERS IN COMPUTER VISION

❌

You have to be an engineer to work in Computer Vision.

A machine can do my job.

It's all math and coding.

✅

Products and experiences require teams from many disciplines.

Humans discover the use cases for and manage the products built with CV.

Marketing, design, sales, management, and technicians support CV products.
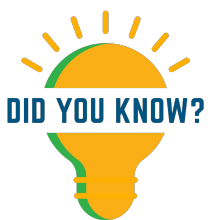
WHY A CAREER IN A.I & COMPUTER VISION?

The applications of AI & Computer Vision (CV) are nearly endless. Anywhere you look or anything you use has the potential for an AI & Computer VIsion solution...

IF YOU LOVE...	CONSIDER...
SPORTS	helping sports teams with coaching, athletes to achieve better mechanics, and stadium managers to optimize fan experiences
FASHION	helping people pick out the best outfit by design, size, and color for their unique body type and preferences with AR like Walmart and Amazon
SHOPPING	assisting retail stores, both automated and staffed, to reduce costs and tailor experiences to fit the customer needs like Amazon Go
BRANDS	developing virtual apps for consumer brands like Nike and Warby Parker that use CV for their try-on apps; Ring and Nest use CV in their home security cameras
HEALTHCARE	using CV to help doctors analyze CAT scans and MRI's has proven very effective, finding cancers earlier and with greater accuracy than human experts

REFLECT

Now that you know about different careers in Computer Vision, think deeply about the following questions:

- What from the "If you love...consider" section brings you joy? (If none do, what are you passionate about?)
- What do you see your future self doing?
- How can you combine your different passions to work towards a career in Computer Vision?
- What can you innovate using Computer Vision to solve a challenge or need in your community or the world?

DID YOU KNOW?

Your Computer Vision knowledge and skills can take you just about anywhere you choose to go!

A CAREER IN AI/COMPUTER VISION: A ROADMAP FOR HIGH SCHOOLERS

Meet with your guidance counselor (or college/career advisor) to develop a plan to support your learning and career aspirations.

Attend college and career fairs and maintain a repository of information about the colleges and companies that interest you. (See below for tips.)

Join (or start) an AI club and participate in events and competitions.

Update your resume, professional portfolio, LinkedIn* page, and college admissions essays to showcase your learning and employment experience.

Prepare for and solidify an internship to develop your future-ready and accounting skill sets.

Collaborate with your educator to invite local professionals to be guest speakers and/or mentors. Check out these scripts to help you get started!

* Check here for age requirements.

Investigate college and career data on Computer Vision:

- There are 65,000+ open jobs on LinkedIn for Computer Vision skills
- AI career profiles by indeed.com
- The 10 HBCUs with the best computer science programs
- U.S. News' best AI undergraduate degree programs

STRETCH

Now that you have learned more about different Computer Vision careers and the roadmap to get there, expand your knowledge and skills by trying some of these activities:

- Look into motion capture technology used in films, like Avatar 2.

- Learn what the Tesla Autopilot system "sees" using CV.

- Read how doctors use CV to improve diagnosis with rays.

- Realize that advances in cellular technology-5G support the expanding uses of CV.

- Try to beat Google Lens, a computer vision system for search, and try to find things it cannot identify!

- Combine fun with learning by understanding how QR Codes work and are made, and then go make your own at a QR Code Generator

- Learn how CV is helping farmers to go organic and reduce pesticides.

- Check out how the Air Force the is now using CV to train and assist pilots.

THE ENGINEERING DESIGN PROCESS

Did you know that you don't have to be an engineer to have a career in CV; however, the Engineering Design Process is a useful tool as you think about problems to solve and what to innovate. 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.

QUESTION
INVESTIGATE · IDENTIFY · REFLECT
What is the problem or challenge?

IMAGINE
BRAINSTORM · IDEATE
How can I solve this problem?

PLAN
STRATEGIZE · STORYBOARD · STRETCH
What tools/resources do I need to solve this problem?

DEVELOP
DESIGN · INNOVATE · PROTOTYPE
What is the best approach to solve this problem?

TEST
COLLECT/REVIEW DATA · REFINE
Does the model solve the problem?

SHARE
COMMUNICATE · SHOWCASE
How can I clearly communicate my solution?

🌱 INNOVATE

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

DEVELOP A PRODUCT	Create a new product (digital or non-digital) that would solve the problem you have identified. (Consider designing, wireframing, or prototyping using platforms like Lucid, ProtoPie, or Figma, or code an app in MIT App Inventor.)
FIX A FLAW	Perform some user testing on an existing CV product and think of ways to remix and improve it for different 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 CV product.
BE A CHANGE-MAKER	Talk to your classmates, family, mentor, or advisory board members to better understand a need in your school or community that CV could solve. How about creating 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 & 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!

💡 **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 or the user experience (UX) design process.

Is there a mentor or industry partner who can discuss the Engineering Design Process, UX Design Process, or Customer Journey mapping 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!
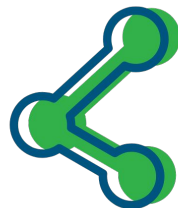
NAF would love to see your creation! After you get your educator's permission, submit yours **HERE**. We may highlight you on social media!

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