**The Great Computer Challenge, 2019**

***Desktop Presentations, Level II***

# **Background**

Artificial intelligence (AI) is the ability of a computer program or a machine to think and learn. Artificial intelligence is one of the most exciting electronic frontiers. Artificial Intelligence has already changed our lives. Many toys, smart cars, phones, appliances, medical equipment, robot vacuums and internet search engines are AI powered. In February 2019, the President of the United States signed an executive order dedicating resources to boost U.S. artificial intelligence. To achieve the goal of the United States as the world AI leader much greater participation in research and development is needed.

# **Guidelines & Requirements**

1. The presentation must contain a *minimum of five (5) slides*.

2. At least one slide must provide *general information* about artificial intelligence.

3. At least one slide must identify *in list format* the usefulness of artificial intelligence.

4. At least one slide must include *a picture or drawing*.

5. At least one slide must include a *graph, chart or table* with numerical information about artificial intelligence.

When creating the slides, try to use the program to its fullest, utilizing as many of the key features of the software as possible. You may use clip art, drawings, audio or video clips on any of the slides. The design and flow of the slides will count more than special effects or transitions from one slide to another.

Remember that your job is to create a visually appealing and informative presentation. Text layout, font size, and color schemes should be chosen to clearly display information. Pictures, charts, and lists should be created for purposes of effectively communicating your points to the reader.

# **Challenge**

Your team has been asked to create a slide presentation to excite students to pursue AI academic programs, AI research opportunities, and career paths that include development of artificial intelligence. To help you with your presentation, information about artificial intelligence is included on the following pages. You may also conduct and organize your own research.

# **Judging Criteria**

* The presentation meets all 5 requirements.
* Information is organized and clearly displayed.
* Pictures, charts, drawings and lists provide effective communication.
* Slides layouts are visually appealing.

# **SOL Correlation**

Mathematics Standards of Learning for Virginia Public Schools – September 2016

* The student will identify, describe, create, and extend patterns found in objects, pictures, numbers and tables.
* The student will collect, organize, and represent data in bar graphs and line graphs.

English Standards of Learning for Virginia Public Schools – January 2017

The student will demonstrate comprehension of information resources to research a topic and complete a research product.

(a) Construct questions about the topic.

(b) Access appropriate resources.

(c) Collect and organize information about the topic.

(d) Evaluate the relevance of the information.

(e) Avoid plagiarism and use own words.

(f) Demonstrate ethical use of the Internet.

***Have fun and thanks for participating in the***

***Great Computer Challenge 2019!***

Everyday Use of Artificial Intelligence

Source: <https://blog.adext.com/things-apps-artificial-intelligence/>

1. Siri – one of the most popular personal assistants and one of the best examples of speech recognition software available today.
2. Gmail – just like with Siri, Google’s email platform uses AI machine learning to stop unwanted email or spam from entering your inbox.
3. Tesla – Tesla has created cars, which are considered smart vehicles with predictive powers. One of their cars’ most unique features is the self-driving hardware.
4. Amazon – Amazon’s artificial intelligence has been around for a long time now. The site’s predictions and suggestions have increased their sales massively.
5. Google Now – Google’s very own personal assistant. This app collects data from the various different Google services: Gmail, Google Maps, Search, YouTube, etc., to provide you with information it considers could be useful to you.
6. Netflix – the largest movie and television show company of its kind, ever. Thanks to artificial intelligence, the app knows your likes, dislikes, and makes suggestions for what you should watch.
7. Google Translate – This app performs statistical analysis of language patters found within millions of translated documents in order to become a multilingual teacher that can help you quickly check a word or phrase in a foreign language.
8. Facebook – AI is the reason Facebook can add attractive and relevant content to individual newsfeeds based on preferences.
9. Google Maps – This navigation tool uses algorithms to suggest the most convenient routes and means of transportation for you to get to your destination.
10. Spotify – This app uses AI to connect with its users creating daily song playlists or mixes based on what you have been listening to lately.

General Information About Artificial Intelligence

Source: <https://imarticus.org/10-interesting-facts-about-artificial-intelligence/>

* Video games that engage humans over the time are based on techniques of artificial intelligence.
* Self-driving cars are based on the artificial intelligence to recognize the driving conditions and adapt the car’s behavior.
* At the rate at which artificial intelligence is being adopted in various areas of our lives, it is predicted that it will replace 16% of our jobs over the next decade.
* Over the next few years, it is predicted that close to three million workers will be reporting to or will be supervised by “Robot-bosses”.
* With AI machine learning and language recognition, 85% of telephonic customer service jobs will be performed by computers and will not need human interaction.
* By 2020, it will be possible for all customer digital assistants to recognize people by face and voice.
* Organizations and private sectors have recognized the opportunity that AI investments can have on the future of their businesses and have set up major investments in AI research and development.

Numerical Information About Artificial Intelligence

Source: [https://towardsdatascience.com/15-artificial-intelligence-ai-stats-you-need-to-know-in-2018 b6c5eac958e5](https://towardsdatascience.com/15-artificial-intelligence-ai-stats-you-need-to-know-in-2018%20b6c5eac958e5)

* Only 15% of enterprises are using AI as of today, but 31% are expected to add AI within 12 months.
* The number of active AI startup companies has increased by 1400% since the year 2000.
* Investment into AI startup companies has soared by 6 times since 2000.
* The share of jobs requiring AI has increased by 450% since 2013.
* The predicted annual growth rate for global AI will be 50.1%, reaching $57.6 billion by 2021. This is due to investments in retail, banking, healthcare and manufacturing, which will make up over half of the worldwide spending on AI.
* 47% of organizations with advanced digital practices have a defined AI strategy.
* Retail, global spending on AI will grow to $7.3 billion a year by 2022, up from $2 billion in 2018.
* About 61% of companies with an innovation strategy are using AI to identify opportunities in data.
* About 38% of consumers believe that AI will improve customer service.
* When AI is in use, 34% of shoppers will spend more money online. About 49% of shoppers said they are willing to shop more frequently online when AI is present.
* The AI healthcare market is expected to hit $6.6 billion by 2021. AI health applications can create $150 billion in annual savings for the U.S. healthcare economy by 2026.
* Around the globe, AI robot imports have increased from around 100,000 in 2000 to roughly 250,000 in 2015.

Educational Information About Artificial Intelligence

Source: <https://www.computersciencedegreehub.com/best/artificial-intelligence-engineering-schools/>

* Many colleges and universities offer artificial intelligence courses. A growing number offer computer science degrees with specialization in artificial Intelligence and degrees in artificial intelligence engineering.
* Most programs are at the graduate level but there are a number of schools providing specialized and comprehensive academic degrees in artificial intelligence starting at the undergraduate level.
* Students who really want to be on the cutting edge of the AI field need to do everything they can to get hands on experience by helping out in an on-campus lab – or in the case of graduate students, by completing original research.

Information About Careers in Artificial Intelligence

Source: <https://erpinnews.com/top-7-ways-start-career-artificial-intelligence-machine-learning>

As a career, artificial intelligence blends math, analysis, and business into one complete job. Now is a great time to follow the steps below to lay the groundwork for you to start working in the AI field.

1. **Understand what AI is**; educate yourself about the field and the responsibilities for this career. The more you learn about the industry, the better.

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1. **Broaden your skill set** related to AI as much as possible. The best way to approach this is to take in learning through a mix of online courses, tutorials, and competitions in the field. You can also sign up for online courses that offers you a certification on completion.
2. L**earn related computer programming languages**. Focus on computer languages that are the most critical first, and then learn about other languages related to the AI areas you wish to work in.
3. **Start working with machine learning programs and algorithms**. Understand which model works for which application, and practice their applications.
4. **Learn how data analysis works.** AI is driven by data, so it would help if you had some knowledge of how data analytics works.
5. **Learn how to translate business problems into mathematical terms.** You should be able to understand business problems and the gain the ability to transform these with AI solutions.
6. **Be curious.** AI learning never stops. Have a sense of curiosity about what is up and coming in the field. It will give you a competitive edge, and an extra boost to your career.

Source: <https://www.techrepublic.com/article/the-6-most-in-demand-ai-jobs-and-how-to-get-them/>

* How to get jobs in the field of AI
	+ **Check out online courses.** Online courses allow someone to learn more about the field as a whole or gain knowledge that is more specialized. Some courses offer certifications.
	+ **Join outside organizations.**Learning from others in the field can help improve your skills. Getting involved with organizations allow data scientists to work on new data, practice and grow their skills while learning from their peers.
	+ **Add standard business knowledge.**Many of the in-demand AI jobs are technical by nature, but knowing how to translate those developments to other businesses or consumers is important.
	+ **Read a lot.** Multiple experts agreed that those working in AI should always be learning, and reading is a great way to do that. Subscribing to scientific publications is recommended.
* The emerging field of AI is expected to create 2.3 million jobs by 2020.
* 83% of companies using AI say the technology is already adding jobs.
* Here are the six most in demand jobs with their average salaries.
	+ Machine Learning Engineer - $142,904
	+ Data Scientist - $141,807
	+ Research Scientist - $137,713
	+ R&D Engineer – $99,694
	+ Business Intelligence Developer - $136,486
	+ Computer Vision Engineer - $136,152