Search entries or author...

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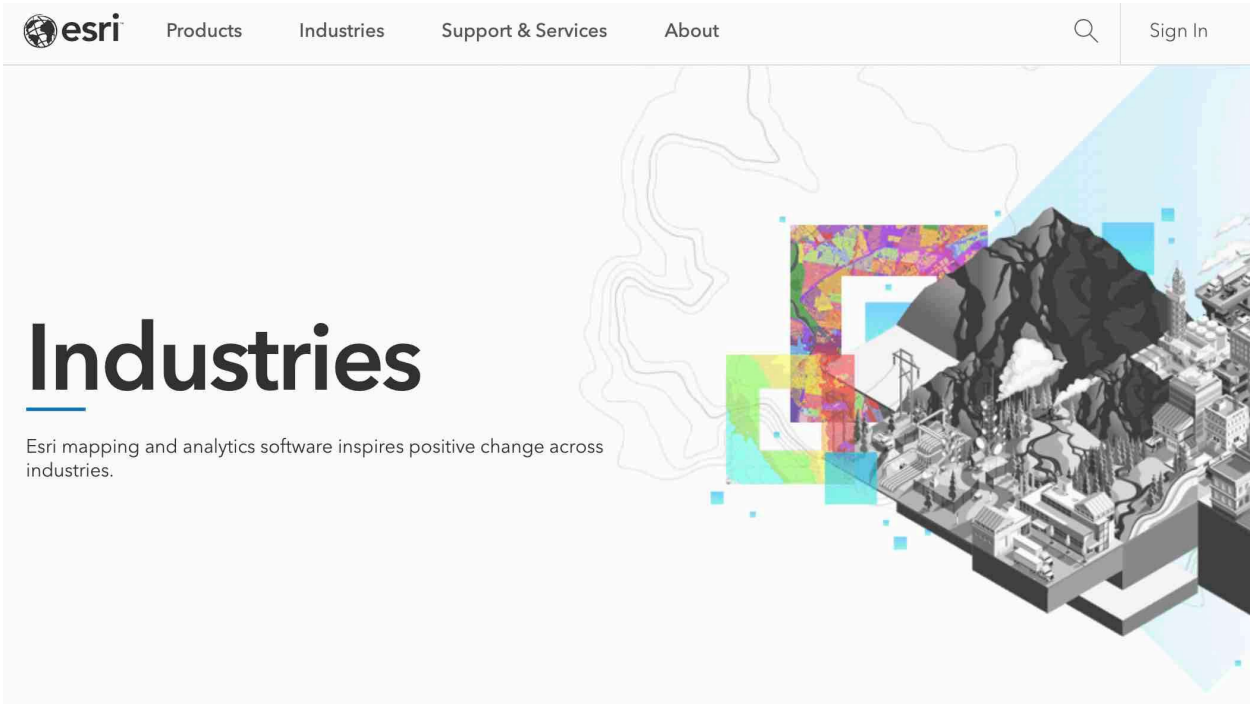
No Due Date | 25 points

6 Replies (2)

Which uses of Geospatial Technology relate to you?



What might you do with GIS?

- **Browse the industry or industries of interest to you, here: https://www.esri.com/en-us/industries/index (https://www.esri.com/en-us/industries/index)** .
- **Find 3-4 links to articles or media** that showcase how the technology is being used and/or where it is headed.
  - Consider composing your post in a separate document to avoid losing your work.
  - **Copy and paste the links into a document** so you can embed or paste them into your discussion post.
  - Click Reply when you are ready to post.
- **Answer the following (20 points possible)**:
  1. Which industry or industries have you selected?
  2. How is GIS used in the industry or industries that you selected?

3. What did you find out about either **problems** that are being **solved** by using GIS software, or **solutions** that are being developed to solve **problems** at some point in the future? In your discussion post, **share the links that showcase how GIS is being used** (or embed videos, if applicable).
4. Do you imagine yourself being involved in one of these industries one day? How would you like to use GIS to solve problems? **OR (especially if you don't plan to work in the industry)** Which applications are most inspiring? Explain.

Engage

Respond to at least one student (5 points possible). Click the reply button (arrow) at the bottom of the post you would like to respond to. Here are some prompts to get you started with replies:

- Discuss something substantive. For example, can you imagine any additional improvements in the problem solving applications discussed in a post you've just read? Explain.
- If you're interested in or knowledgeable about similar industries, share what you know that was not discussed in the post you've just read.
- Did you know about the applications of GIS that your classmates are discussing? What is surprising or interesting about what you've just learned?
- *Discussions should always be polite, respectful, and positive. Please remember that text is much more harsh than hearing the tone of voice you would use or seeing your face as you talk. Make an effort to be extra positive and kind*.

*No minimum word count. I expect content-rich and information-rich posts. You get out of the class what you put in! Do your best to use proper spelling and grammar, but the ideas are what count the most! Emojis are acceptable to help with the tone of your language. Avoid most texting language - it is frowned upon unless used sparingly and in a clever way. ;)

Reply

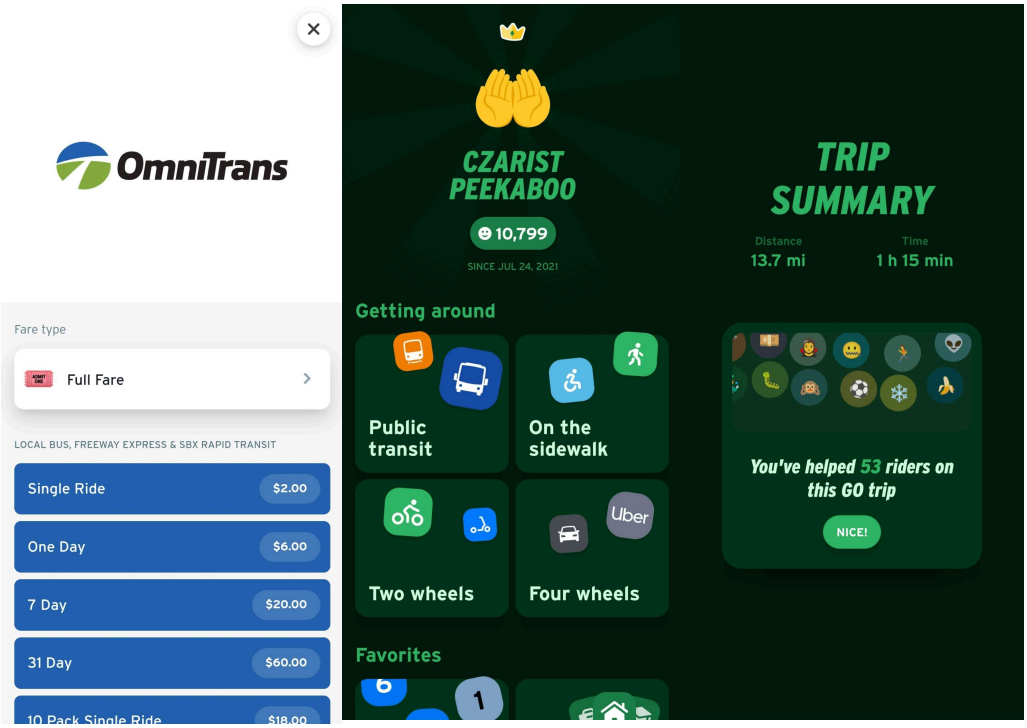
CM **Colin Morris-Moncada (https://sbccd.instructure.com/courses/55385/users/150003)**
Mar 6 4:52am

1. Which industry or industries have you selected?

I have selected the industries of transit and conservation. These encompass some of my passions and interests.

2. How is GIS used in the industry or industries that you selected?

A company based in Montreal called Transit has revolutionized how we use technology when paying for and using public transportation. The app leverages crowdsourcing by using real-time data and not just static information that a transit provider releases. This makes the app more reliable than alternatives due to it being more accurate than its competitors. A part of the experience is also increasing the amount of GO riders you have helped by using the app. This gives the user a tangible number of how useful the app is and incentivizes them to keep using it. It also gives the developer feedback on metrics such as where people are using public transportation and the average trip time for each user. You can also pay for your ticket inside the app which also provides convenience for an every day transit rider.



GIS is also heavily used in the conservation industry with strategies such as conservation land management, landscape conservation, and community-based conservation. GIS is being used in the discipline of conservation biology which encompasses genetics, population ecology, wildlife management, and the measurement and analysis of biodiversity and habitat. For example, by using GIS software we can generate a suitability map indicating the areas most likely to be selected by bears for crossing points. These maps can also be helpful to preserve biodiversity and offer insights into endangered species and how best to protect them.

3. What did you find out about either **problems** that are being **solved** by using GIS software, or **solutions** that are being developed to solve **problems** at some point in the future?

Transit Industry

- https://www.esri.com/en-us/industries/transit/overview (https://www.esri.com/en-us/industries/transit/overview)
- https://manifesto.transitapp.com/vision (https://manifesto.transitapp.com/vision)

Conservation Industry

- https://www.esri.com/en-us/industries/conservation/overview (https://www.esri.com/en-us/industries/conservation/overview)
- https://www.geographyrealm.com/gis-used-conservation-biology/ (https://www.geographyrealm.com/gis-used-conservation-biology/)

4. Do you imagine yourself being involved in one of these industries one day?

I think I could see myself in either industry in the future. I am very passionate about public transportation and have thought about becoming a bus driver/train conductor or possibly working for an agency such as Metrolink or LA Metro.

Working with a transit agency would allow me to use GIS to better connect the communities in California by bus and rail. There are currently transit projects such as the California High-Speed Rail (CAHSR), Brightline West, and the sbX Purple Line that represent an investment by local, state, and federal governments to promote public transportation.

I think working for the United States Forest Service (USFS) within the conservation industry would also be appealing to me. Working in a subfield such as hydrology and doing field work that is more hands on than the transportation industry would give me a better sense of accomplishment because it's more tangible.

Reply | | |

Pablo Gonzalez (https://sbccd.instructure.com/courses/55385/users/19124)
Feb 23 4:31pm

The industries I have chosen are:

- Design and Engineering:
  - https://www.esri.com/en-us/lg/industry/aec/new-south-wales-case-study (https://www.esri.com/en-us/lg/industry/aec/new-south-wales-case-study)
  - Use: GIS is used here in conjunction with what is known as Building Information Modeling (BIM). Think of it as a digital repository where architects, engineering, and construction teams on a project can collaborate and document information through the lifecycle of a building project in a centralized manner. This definitely helps to centralize record keeping in modern construction projects and would be a valuable tool to a city hall, or one of its branches, for example.
- Healthcare – Strategic Planning:
  - https://www.esri.com/about/newsroom/arcnews/helping-schools-navigate-the-pandemic/ (https://www.esri.com/about/newsroom/arcnews/helping-schools-navigate-the-pandemic/)

    - Use: We all saw the practical application for GIS in helping to create outbreak heatmaps during the pandemic, and it is what opened my eyes to the world of GIS. The speed with which the data could be updated, daily in the early days of the COVID-19 pandemic, was incredible, and as someone who has a background in data science and structures, I was left amazed. This article particularly describes the use of GIS in helping to guide "re-opening" an outbreak area in stages, which was something that was left a little more ambiguous in the waning days of the COVID-19 pandemic, and the potential impacts thereof, with the use of infectious disease modeling and predictions, something that is calculus heavy.
- Telecommunications – Planning and Engineering:
    - https://www.esri.com/en-us/lg/industry/telecommunications/city-of-fargo-case-study (https://www.esri.com/en-us/lg/industry/telecommunications/city-of-fargo-case-study)
    - Use: The City of Fargo, ND was looking for a way to map its utility network as it relates to start-end points for their fiber optic network, establish jurisdiction/ownership of the points, and determine the strand count of the fiber-optic bundles at these points. Having already used an ESRI product in the initial phases of establishing the fiber network, the city staff in charge of mapping were able to use this data to point out where there were physical breaks in the fiber network and repair with specific site with precision. This specifically cut out having to use personnel hours in looking through fiber splicing diagrams. Excellent use as a time saver!

As someone who is interested in and has a background in data science, project management, and mechanical engineering, I can definitely see GIS being useful in streamlining the project management experience and having a centralized location for technical data is absolutely invaluable when one eventually has to "go-back" as time and use wears on a particular component, or better yet, help to estimate potential parts for replacement BEFORE a failure occurs, which could save time and money.

Reply | |

CA **Carlos Avila** (https://sbccd.instructure.com/courses/55385/users/76639)

Feb 20 6:07pm | Last reply Feb 23 4:40pm

The industries I have selected are water, electricity and gas. Since I have a background in water distribution, I wanted to see what the updates for GIS are. Electricity and gas, I selected next because these utilities are enormous, and I want to see how they better their system by using ESRI GIS.

For example, in my line of work I constantly use our GIS to locate valves, add or remove information on assets, and search history with images on equipment and sites that we service. Every morning once my task is explained, I immediately go to the iPad where the GIS program is installed and search for the asset or assets and get an exact location and drive off to the site. Once the maintenance is completed, I can add comments about the work, mention any future

repairs needed or discrepancies, we can add images as attachments to each individual asset and change the color of the icon from blue to green to show a completed task. Benton Harbor, Michigan has been using GIS to keep track of all the replaced and need of replacement lead service water lines. Using the ESRI GIS platform they have been able to identify the assumed replacements, completed, and remained with exact geographical location and information. https://www.esri.com/en-us/lg/industry/water/stories/abonmarche-case-study (https://www.esri.com/en-us/lg/industry/water/stories/abonmarche-case-study)

Electrical industries are using GIS to monitor the grid and increase reliabiltiy. They can see equipment that has failed, and retrieve results. GIS has an entire view of the grid and it can warn of changes occurring in real time. Many challenges are faced with an industry that is rapidly changing and GIS offers them the ability to monitor construction progress, keep track of records, and update system locations. https://energycentral.com/o/esri/gis-foundation-grid-modernization (https://energycentral.com/o/esri/gis-foundation-grid-modernization) .

Gas, just like the other two industries mentioned, benefit from GIS. With the gas lines being underground, it is important that those utilities drawn to an identical image. Because these lines are not visible, GIS mapping of the underground line becomes the most important visual aid for this industry. It really is amazing how an entire system can be drawn on a map with precision and valuable information from yesterday, today and for tomorrow. https://www.esri.com/content/dam/esrisites/en-us/media/technical-papers/essential-gas-pipe-network-data-management-in-arcgis.pdf (https://www.esri.com/content/dam/esrisites/en-us/media/technical-papers/essential-gas-pipe-network-data-management-in-arcgis.pdf) .

Reply | | |

1 Reply (1)

SR

Sandra Ruiz (https://sbccd.instructure.com/courses/55385/users/148814)

Feb 9 9:39pm | Last reply Feb 20 6:26pm

(1) Lifeways of the Little Colorado River:

https://storymaps.arcgis.com/collections/2a13814196244a15b185563628593d00?item=1 (https://storymaps.arcgis.com/collections/2a13814196244a15b185563628593d00?item=1)

(2) Responding to the Climate and Nature Emergency with Indigenous Knowledge:

https://www.esri.com/about/newsroom/blog/indigenous-knowledge-responds-climate-nature-emergencies/ (https://www.esri.com/about/newsroom/blog/indigenous-knowledge-responds-climate-nature-emergencies/)

(3) Tribe Maps Where to Burn to Restore Northern CA Forest:

https://www.esri.com/about/newsroom/blog/karuk-map-forest-restoration/ (https://www.esri.com/about/newsroom/blog/karuk-map-forest-restoration/)

I selected many industries from Conservation, Education, Nonprofit and NGOs, Science, State and Local Government, but the industries I dove deeper were Native American Tribal Governments and Racial Equity in the Nonprofit sector.

In the Native American Tribal Governments industry, GIS has been used to document the significance of the Little Colorado River for Native people in the White Mountain Apache, Zuni, Navajo, Hopi and Hualapai nations. The first link I embedded is a story map which showcases individual stories of Native people and their connection to the river from providing them with a "place of livelihood, pilgrimage, and physical and spiritual nourishment to this day."

The second link is an interview with James Rattling Leaf, Sr., a member of the South Dakota Rosebud Sioux Tribe. He shares that the 35-plus tribal colleges have been using GIS in the classroom and in research; and that he has been tasked to help with increasing tribal data scientists, applications, and data users, especially in the environmental science fields. Some of the issues that Mr. Rattling Leaf talks about is the loss of elders which in consequence leads to a loss of their Native language, customs, and traditions; the degradation of land and the environment. Towards the end of the article, he mentions how he hopes that more members of his community can learn how to use data analysis and visualization to address pressing issues.

The third link shares about the Karuk Tribe, specifically the Western Klamath Restoration Partnership, is using "location-aware GIS applications in the field [prescribed fire] to document which trees to keep and which to cut down for a more balanced landscape." GIS has also helped design the Karuk Climate Adaptation Plan "to preserve cultural resources, promote biodiversity, and mitigate catastrophic wildfires." GIS has helped the tribe to return fire to their landscape, preventing extreme fires, and regenerating basketry materials and Native foodways.

Yes, I do imagine myself being involved in the industry to work with Tribal Nations on environmental conservation / justice. I am already working with Native American students and families in Los Angeles County in the education field, but I would like to deepen my experience in working with Indigenous and Native communities in the conservation or environmental education field. I am also currently learning my Native language Nawat, and seeing the first link of the story map inspired me to wanting to create a story map that shares about the Nahua culture and people and how vast this culture extends from Mexico to Central America, where I can document the meaning and origin of Nawat words to location on a map. I would like to use GIS to document more accurate on Indigenous and Native communities, but also lead

community science workshops so others can learn about mapping and collecting data about what matters in their own communities.

Reply | 1 |

1 Reply (1)