Notes from Geospatial/GIS Meetup

April 20, 2021

via Zoom

Attendees: Janet Reyes, facilitator;

Via Zoom: Ademide Adelusi-Adeluyi, Advyth Ramachandran, Alan Rodriguez, Amanda Grey, Canserina Kurnia, Elia Scudiero, Elizabeth Perez, Hamid Shoghian, Jenny Chen, Joseph (Jay) Spencer, Kevin Comerford, Krystal Boehlert, Mario Guevara, Mauricio Perea, Mike Cohen, Okikiola Michael Alegbeleye, Shanon Langlie, Yuhua Situ, Yvonne B

<u>Announcements</u>

This meeting was recorded; video is available <u>here</u>. The access passcode to view is   X**r7Lt*

Two **geospatial workshops** are being offered by UCR Library in Spring 2021: <u>Comparing PolicyMap and Social Explorer</u> on April 21, and <u>Introduction to Story Maps</u> on May 11. Both will start at 2:00 pm.

The **David Rumsey Map Center** at Stanford is hosting a <u>presentation</u> on Friday, April 23 at 3:15 pm. The speaker will share his experiences as a blind cartographer.

The Esri **<u>Imagery and Remote Sensing Educators Summit</u>** will be held on April 28 and 29.

The next **<u>GIS in Higher Education Chat</u>** on May 4 at 9:00 a.m. will focus on collaboration across organizations in ArcGIS Online. Recordings and resources from previous presentations can be found on the site.

Canserina shared that the **<u>Education Summit</u>** will be held in June this year, before the User Conference.

UC Davis DataLab and #maptime Davis invite anyone interested to join their <u>workshops</u> for engaging with spatial data. The current schedule shows workshops on Tuesday mornings from 10:00 - 12:00 through May 18. Recordings of previous workshops are available.

The **Leventhal Map & Education Center at Boston Public Library** hosts a series of <u>talks</u>; some, in the Angles on Bending Lines subseries, relate to bias and distortion in mapping.

The American Geographical Society Library hosts an annual **Maps & America lecture series**. A <u>recording</u> of this year's talk on Mapping the Grand Canyon is now available.

Map sharing: This set of <u>maps</u> from the Bureau of Transportation Statistics was shared with Janet earlier this month.

The slot for a presenter at the **Geospatial/GIS meetup on** June 15 is still open. Contact Janet if you're interested in presenting, or if you have a discussion topic to suggest.

First-time Attendees

Our first-time attendees who introduced themselves in the chat:

Hamid Shoghian is involved with geoinformatics.

Krystal Boehlert is in Digital Initiatives at UCR Library.

Mario Guevara (the presenter for today) is in Elia Scudiero's [Digital Agronomy Lab](#).

Mauricio Alejandro Perea Ardila is from Colombia.

To our other first-time attendees: thanks for joining us, and we hope you'll return in the future!

Presentation

Mario Guevara is a postdoctoral scholar in Environmental Sciences, in the Digital Agronomy lab. His topic was "Digital soil salinity mapping with proximal soil sensing and machine learning." He and his colleagues have been working on building a prediction pipeline for soil salinity, using data collected from agricultural fields in California's Central Valley and Coachella Valley. The overall goal is to increase the quality, quantity, and access of soil salinity data by creating predictive models in which salinity data are correlated with signatures on satellite imagery.

Their research effort has three major components: pipelines for data management, calibrating data, and prediction.

Data was collected at several locations, by different research groups over a span of more than 20 years, and included direct and indirect soil salinity measurements. One part of the workflow involves standardizing and harmonizing the data so that it can be used in predictive modeling.

The researchers are using ensemble methods - traditional modeling approaches, such as linear regression, as well as machine learning methods - to create models with the highest degree of accuracy. So far, they have achieved good results with their predictive models in most instances, but are also studying the fields for which the models have been less successful.

Next steps will include incorporating climate and other relevant data into the prediction pipeline. Google Earth Engine is the platform being used to incorporate multiple remote sensing products and to increase the granularity of their analyses.

The team is maintaining transparency by sharing their code on GitHub. For a variety of reasons, they can't share the data they used to create the models. It's anticipated that researchers in Environmental Sciences will use the models to predict soil salinity under different climate change scenarios.