Information Resources Exchange Group Highlights

Wednesday, September 13, 2017

The 104th meeting of the Information Resources Exchange Group (IREG) was called to order at the Delaware Valley Regional Planning Commission's office by IREG Chair, Phil Pierdomenico, from the Philadelphia Water Department. Forty people were in attendance.

Key Points

- Using a person's zip code to learn more about their legislative district presents challenges due to mismatched boundaries lines. Azavea has created a tool using their Cicero database to look at the population distribution within a zip code in order to increase the confidence in a zip code match.

- In the inaugural year, Azavea's Open Source Software Fellow Yoni Nachmany spent the summer engineering ways to use machine learning to process the growing magnitude of high-quality aerial imagery to provide answers to questions in today's quickly evolving landscape.

- As open-source software projects gain in popularity, maintaining clean code while having several contributors is more important than ever - GitHub provides an effective set of tools to do just that.

Presentations

Cicero Zip Code to Legislative District Matching

Aaron Dennis, Data Specialist - Azavea (adennis@azavea.com)

Cicero, an Azavea product, is a database that is an invaluable tool that can be used by citizens to learn more about the legislative district they are a constituent of at every government level. While they already provide a tool that provides high-accuracy results based by matching districts with street addresses, they have begun developing a tool to provide the same results using a five-digit zip code. Zip codes provide an increased level of personal security and are widely adopted, but present the challenge of not always match up with legislative districts. Azavea has tackled that issue by using U.S Census Bureau population data to investigate the population distribution within a given zip code to increase the confidence in providing the best match.

Related Resources: How Accurate is Matching ZIP Codes to Legislative Districts?

https://www.azavea.com/blog/2017/07/26/accuracy-zip-district-matching/

My Open Source Software Fellowship at Azavea: Software for Deep Learning on Satellite Imagery

Yoni Nachmany, Open Source Software Fellow and Student at University of Pennsylvania - Azavea

Yoni spent his summer contributing to Azavea's reputation as a B Corporation, using state-of-the-art research to answer questions we face in our everyday lives by leveraging open-source software to analyze the abundance of high quality satellite imagery available today. On July 20th, Yoni and a team of Azaveans placed 23rd out of 938 teams in a competition called "Planet: Understanding the Amazon from Space" using their Raster Vision system that uses a machine learning technique called deep learning to automate imagery analysis. He also worked on two other projects - SpaceNet, a program that uses Python to investigate satellite imagery, and GeoTensorFlow, a program that can be trained to predict labels of raster imagery using the Raster Vision Models.

Related Resources: Deep Learning for Semantic Segmentation of Aerial Imagery

https://www.azavea.com/blog/2017/05/30/deep-learning-on-aerial-imagery/

GitHub Desktop 101

Taylor Nation, Operations Engineer - Azavea (tnation@azavea.com)

GitHub (https://github.com) is an open-source version control tool that is used by many developers to help them manage and build applications that revolve around code that is constantly being changed, improved, and worked on by an individual or teams of developers. Taylor presented an overview of what GitHub is, how to use some of the tools, and key terminology. Taylor walked through the workflow that Azavea uses to ensure that software and projects are developed using best practices, showing several teams can work on the same project simultaneously and independently and be highly productive. GitHub can also be used by project managers to track progress, collect issues or problems with code, set milestones, enhancements, and deadlines, as well as allow other contributors from the public to improve open-source based projects.

Related Resources: GitHub Pull Request Template Workflow

https://www.azavea.com/blog/2017/05/08/github-pull-request-template-workflow/

Information Items

- DVRPC's 2015 Enhanced Land Use (Product 2) is available for download and use on DVRPC's GIS Data Portal.
- International GIS Day is coming up on November 15th, and both Temple University and Rowan College - Burlington County have events planned.
- The next MAGTUG Meeting is October 20th at the New Jersey Department of Transportation office

The next scheduled IREG meeting is Wednesday, December 13th, 2017.

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