UtahView 2021 - 2022 Activities

UtahView is hosted by the Remote Sensing/GIS Laboratory in the Quinney College of Natural Resources at Utah State University in Logan, Utah. Dr. R. Douglas Ramsey is the UtahView Principal Investigator and Ellie Leydsman McGinty is the UtahView State Coordinator. During GY21, UtahView (1) presented on the history of the Landsat Program at an ASPRS GeoByte Webinar, (2) developed a series of history posters that highlighted some important individuals and events associated with the Landsat Program, (3) conducted a literature review and created an annotated bibliography on U-Net architecture and convolutional neural networks, and (4) continued to present the Utah As Art exhibit at various AmericaView-related events.

The ASPRS GeoByte Webinars are online seminars sponsored by the ASPRS GIS Division. On April 8, 2022, UtahView presented *A History of the Landsat Program*. This presentation was based on the **Google Earth Web tour** that was developed by UtahView for a GY19 AmericaView Strategic Project Mini-Grant.

To accompany the Google Earth Web tour and the ASPRS GeoByte Webinar, UtahView developed three posters that were presented at the Pecora 22 Conference in Denver, Colorado. The three posters included the following:
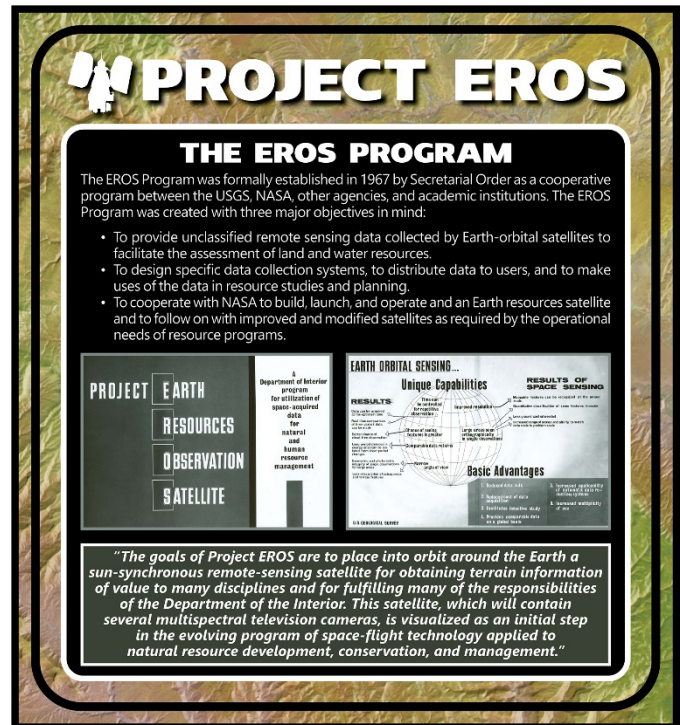
1) **The Pioneers of the Landsat Program**
2) **Project EROS: An Earth Resources Observation Satellite Program**
3) **Remembering Charles J. Robinove**

UtahView worked with a GIS Technician, Aidan Buie, in the Remote Sensing/GIS Laboratory at Utah State University to conduct a literature review and to develop an annotated bibliography on U-Net architecture and convolutional neural networks (CNNs). The objective of this effort was to identify a list of methods that could support object-based image analysis. Two documents were developed, including:
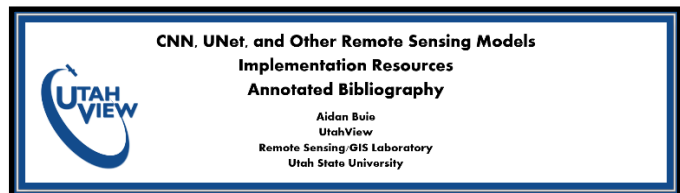
1) **A Brief Explanation of U-Net Architecture**
2) **CNN, UNet, and Other Remote Sensing Models**

ASPRS GeoByte Webinar presentation title slide.

Excerpt from the Project EROS poster.

Annotated Bibliography by Aidan Buie.

AmericaView
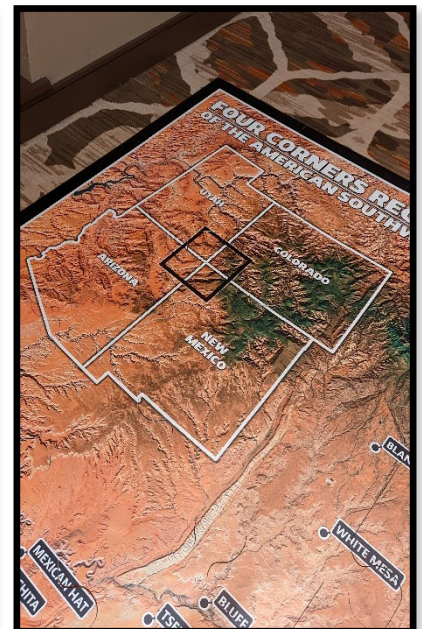Empowering Earth Observation Education
americaview.org

BENEFITS TO UTAH

During GY21, UtahView continued to develop educational and outreach materials that promoted and furthered the understanding of geospatial science and applications. The ASPRS GeoByte Webinar highlighted the value and legacy of the Landsat Program. The poster series provided some remarkable information about key scientists and individuals involved in the Landsat Program. One of these scientists, Charles (Chuck) Robinove, passed away in early 2022 and very little was known about him in terms of his scientific contributions. The information that was gleaned about Chuck after some in-depth investigations revealed that he played a pivotal role in the Landsat Program. The literature review and annotated bibliography have the potential to support remote sensing studies that integrate machine learning algorithms. These documents can serve as a basic reference for academics and students who are interested in delving into more sophisticated object-based image classification approaches. Lastly, the Utah As Art map collection and puzzles generated for AmericaView events continue to foster geographic literacy and awareness and to serve as a platform for engaged and interactive learning.

Utah As Art at 2022 Geo Week in Denver, Colorado.

Santa Barbara County floor puzzle at the Lompoc Public Library in celebration of the Landsat 9 launch.

Elizabeth Robinove, Chuck's widow, at the Pecora 22 Conference in Denver, Colorado.

Four Corners floor puzzle at the Pecora 22 Conference in Denver, Colorado.

UTAHVIEW CONSORTIUM MEMBERSHIP

The UtahView consortium membership consists of Dr. R. Douglas Ramsey, Professor in the Quinney College of Natural Resources and Director of the Remote Sensing/GIS Laboratory at Utah State University; Dr. Phoebe McNeally, Research Associate Professor and Director of the DIGIT Laboratory at the University of Utah; Dr. Sowmya Selvarajan, Assistant Professor of Geomatics at Utah Valley University; Ellie Leydsman McGinty, Researcher III in the Remote Sensing/GIS Laboratory and UtahView State Coordinator; and the Utah Geographic Information Council (UGIC). Collectively, these consortium members bring a wealth of scientific, outreach, and technical experience to the urban, rural, and wildland regions of Utah.

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