**Help for Cross Sections Extraction Visualization Tool**

**This is a tool for ArcGIS Pro.**

Built with ArcGIS Pro 3.1.1  
Python version 3.9.16.

**This is an ArcGIS Pro tool to** extract cross-sectional profiles and visualize elevation data**. It takes an input elevation raster (DEM), cross-section shapefile, number of points along each profile, and outputs** comma-separated values (CSVs) files and Portable Network Graphics (PNG) images**.**

The steps involved are:

1. Extracting cross-sectional profiles from cross-sectional line data.

2. Collecting elevation data from a Digital Elevation Model (DEM) raster.

3. Calculating horizontal distances and elevations for points along the profiles.

4. Generating CSV files with the extracted data.

5. Creating PNG images to visualize cross-sectional profiles.

6. Enabling users to specify output directories and the number of points.

**Input Required:**

The **Cross-section** shapefile and **Digital Elevation Model** raster represent the terrain of an area of interest. It can be in any valid raster format.

**Output Directories:**

Provide the name to store the output cross-section CSVs and PNG. If a full path is provided, the output will be saved to that file. If only the name is provided output will be saved in the same location as the input file. Only the folder location is required for both outputs, the file will be saved as .csv and. PNG file format of ArcGIS Pro.

The demo data is included in the “Data” folder and output samples in the "Samples" folder in the same directory as the tool. For use as a geoprocessing Python tool and other things, please refer to item description metadata and manual within the tool from ArcGIS Pro. For code and detail descriptions please visit the GitHub page: [CrossSectionsExtractionVisualization/README.md at main · thapawan/CrossSectionsExtractionVisualization (github.com)](https://github.com/thapawan/CrossSectionsExtractionVisualization/blob/main/README.md)

**Credit:**

*Prepared by: Pawan Thapa*

*Email: pthapa2@crimson.ua.edu*

*As part of the GY 539 Assignment*

**Acknowledgement:**

Youtube video of GeoDevtools

Dong, P., Zhong, R., Xia, J., & Tan, S. (2020). A semi-automated method for extracting channels and channel profiles from lidar-derived digital elevation models. *Geosphere*, *16*(3), 806-816.