



# ArcPy and ArcGIS: Geospatial Analysis with Python

By Silas Toms

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**ArcPy and ArcGIS: Geospatial Analysis with Python** By Silas Toms

**Use the ArcPy module to automate the analysis and mapping of geospatial data in ArcGIS**

## About This Book

- Perform GIS analysis faster by automating tasks, such as selecting data or buffering data, by accessing GIS tools using scripting
- Access the spatial data contained within shapefiles and geodatabases, for updates, analysis and even transformation between spatial reference systems
- Produce map books and automate the mapping of geospatial analyses, reducing the time needed to produce and display the results

## Who This Book Is For

If you are a GIS student or professional who needs an understanding of how to use ArcPy to reduce repetitive tasks and perform analysis faster, this book is for you. It is also a valuable book for Python programmers who want to understand how to automate geospatial analyses.

## What You Will Learn

- Understand how to integrate Python into ArcGIS and make GIS analysis faster and easier
- Model an analysis and export it to Python for further improvement
- Create Python functions from exported scripts using ArcToolbox tools to avoid repetitive code
- Update the records of interest in your existing geospatial data automatically using data cursors
- Add new geospatial data to existing datasets automatically from field-collected data or data produced during analysis
- Export formatted analysis results to spreadsheets automatically
- Update map documents with analysis-generated data and export maps to PDF or image formats

- Create geometric networks and analyze routes using scripts

## In Detail

ArcGIS allows for complex analyses of geographic information. The ArcPy module is used to script these ArcGIS analyses, providing a productive way to perform geo-analyses and to automate map production.

This book will guide you from basic Python scripting to advanced ArcPy script tools. This book starts off with setting up your Python environment, demonstrates a complex ArcPy script tool with multiple iterations, illustrates data access module cursors, and explains how to use ArcPy Geometry classes. Then, you will learn how to output maps using ArcPy.Mapping, and how to create ArcGIS script tools.

With the help of this book, you will be able to create repeatable analyses reducing the time-consuming nature of GIS, making you into a GIS professional as powerful as a whole team.

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### Editorial Review

#### About the Author

#### **Silas Toms**

Silas Toms is a geospatial programmer and analyst with a love of geography, history, food, and sports. He resides in the San Francisco Bay Area and can't decide which side of the Bay is more beautiful. He received a bachelor's degree in Geography from Humboldt State University and is currently pursuing a master's degree in GIS at San Francisco State University. With a background in GIS analysis for city governments and environmental consulting, Silas loves the combination of GIS and Python for analysis automation and data manipulation. Working for Arini Geographics, Silas is helping governments understand how GIS can organize and simplify the management of infrastructure and the environment. This dual role as a programmer and analyst allows him to use Python and GIS to quickly produce geospatial data and tools. Combined with web mapping, these tools are transforming how governments work to serve the public. He also teaches workshops on ArcPy and web mapping at the City College of San Francisco, while hoping to one day finish his master's thesis. Silas has worked as a reviewer on the book Python Geospatial Analysis, Packt Publishing and is working on the book Python Geospatial Development, Packt Publishing to be published in 2015.

### Users Review

#### **From reader reviews:**

##### **Shannon Silva:**

Book is to be different for every grade. Book for children right up until adult are different content. As it is known to us that book is very important usually. The book ArcPy and ArcGIS: Geospatial Analysis with Python seemed to be making you to know about other information and of course you can take more information. It is very advantages for you. The guide ArcPy and ArcGIS: Geospatial Analysis with Python is not only giving you much more new information but also to be your friend when you feel bored. You can spend your own personal spend time to read your guide. Try to make relationship while using book ArcPy and ArcGIS: Geospatial Analysis with Python. You never experience lose out for everything when you read some books.

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