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QGIS AND PYTHON FOR GEOSPATIAL ANALYSIS

A SPECIALIST TRAINING COURSE

QGIS and Python for Geospatial Analysis

A specialist training course

Audience: This is a course for people from various backgrounds. The focus is on data analysis and automation of day-to-day tasks.

Overview: *QGIS* is a powerful open-source tool for geospatial analysis. This is an intensive course on working in *QGIS* and *Python* to perform geospatial analysis with a particular focus on analysis of continuous datasets (e.g. remote sensing imagery and *NetCDF*).

Prerequisites: Completion of the Python for Geospatial Analysis training course from Python Charmers.

Skills: This course will teach you key skills in using *QGIS* for geospatial analysis and how you can integrate Python into this process.

At the end of this course you will have experience in working with *QGIS* to process spatial data, working with plugins to expand the capabilities of QGIS, and extending analytical tools with Python functions and libraries.

You will learn how to work with raster, grid and mesh data in *QGIS*, perform analysis using the raster and grid calculator, visualise data and produce maps, and write your own Python functions to include in the *QGIS* function editor and the processing toolbox.

Format: Live, online, one-on-one tutorial. Each topic is a mixture of hands-on exercises and expert instruction.

Duration: 1 day

Available dates:
- 7th August 2020
- 28th August 2020
- 9th September 2020

Instructor: Henry Walshaw (see bio below)

Price: $1800 (excl GST)

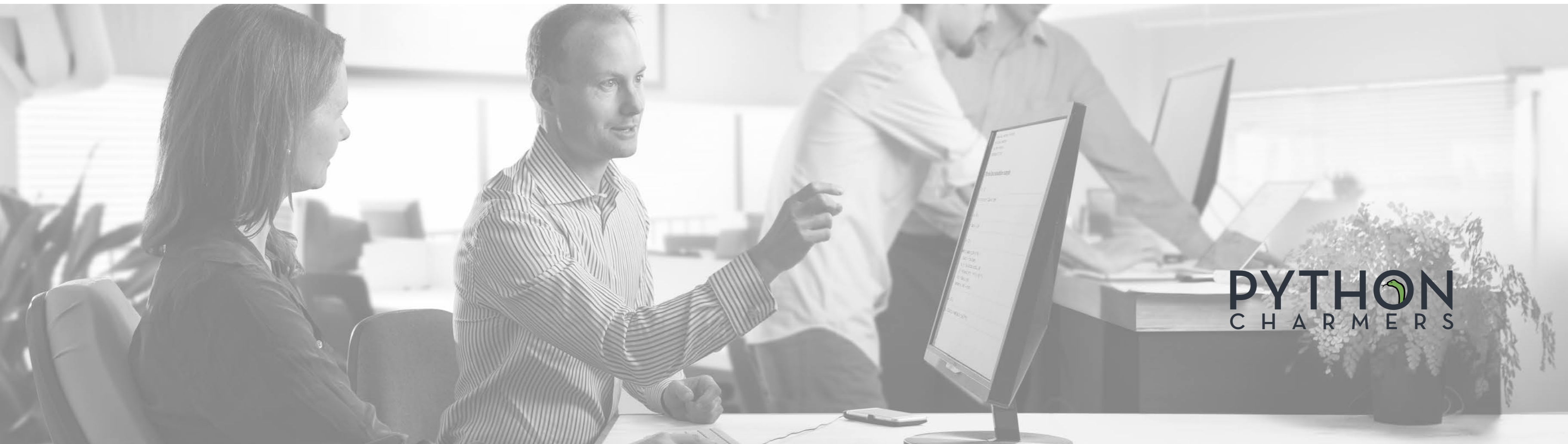PYTHON
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Topic outline
QGIS and Python for Geospatial Analysis

This one-on-one tutorial will cover:

- Setting up / installing *QGIS* (optional)

- Adding data to *QGIS*: vector, raster, and mesh data

- Spatial data conversion; comparing vector, raster, and mesh data

- Working with raster data from different sources:
  raster projection and alignment

- Calculating NDVI from *landsat*: remote sensing indicies and the
  Raster Calculator

- Python in the *QGIS* Expression Calculator

- Worked example:
  Writing a *Processing* script to perform complex geoprocessing tasks

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Personal help

Your trainer will be available after each day for you to ask any one-on-one questions you like — whether about the course content and exercises or about specific problems you face in your work and how to use *QGIS* to solve them. We encourage you to have your own data sets ready to discuss if you wish.

Other information

Custom topics: We would be happy to include any particular datasets or custom topics on request.

Materials: We will provide you with printed course notes, cheat sheets, and a USB stick containing kitchen-sink installers for multiple platforms, solutions to the programming exercises, several written tutorials, and reference documentation on *QGIS* and the extensions and tools covered in the course.

Exercises: There will be practical exercises throughout the course. These will be challenging and fun, and the solutions will be discussed after each exercise and provided as source code. During the exercises, the trainer(s) will offer individual help and suggestions.

Timing: The course will run from 9:00 to roughly 17:00 each day, with breaks of 50 minutes for lunch and 20 minutes each for morning and afternoon tea.

Instructor bio

Henry Walshaw

Henry has over 15 years of experience in data science and Python application development and has trained hundreds of people in how to use Python from organisations including AGL, the Bureau of Meteorology, CSIRO, DSTO, ESRI, Geoscience Australia, the NSW Department of Finance, Shell, and Telstra.

Henry's core technical expertise relates to the development and analysis of large scale spatial datasets (primarily using Python), and communicating this understanding to both subject matter experts and the general public.

Before joining Python Charmers, Henry worked in both government and industry — at Geoscience Australia, the Victorian Department of Sustainability and Environment, and the Environmental Protection Agency (EPA); as a consultant with Sinclair Knight Merz (SKM), a manager at we-do-IT, and as CTO of a startup. He holds a Bachelors in Computational Science with a major in geography.

About Python Charmers®

Python Charmers is a leading global provider of Python-related training including QGIS, based in Australia and Singapore. Since 2010, Python Charmers has given over 450 training courses and bootcamps to around 4500 delighted people from organizations including AGL, Atlassian, Barclays, BHP, the Bureau of Meteorology, CSIRO, Cisco, Deloitte, Dolby, GDF Engie, Geoscience Australia, pwc, Singtel Optus, Shell, Snowy Hydro, Sportsbet, Telstra, Toyota, Verizon, Westpac, and Woolworths. Python Charmers specializes in teaching programming and data science to scientists, engineers, data analysts, spatial analysts, quants, and computer scientists in the Python language.

Python Charmers' trainers boast years of experience and Python, GIS, scientific computing, and machine learning, and deep roots in the open source community, as both speakers at events and contributors to well-known open source projects.

Testimonials: Testimonials from past participants of our training courses are available at

https://pythoncharmers.com/testimonials/

Questions: We are happy to customise this program further on request. Please let us know if you would like to discuss this or have any other questions.

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