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siibra –programming with multiscale brain atlases in Python - Part I

Thursday 9 February 2023 16:35 (1 hour)

siibra is a software tool suite implementing an openly accessible brain atlas framework which connects multimodal datasets from different resources to anatomical structures in reference spaces at different spatial scales. The tool suite is designed to address both interactive exploration through an interactive 3D web viewer (siibra-explorer) as well as integration into data analysis and simulation workflows with a comprehensive Python library (siibra-python). In this session, we first introduce the multidimensional concept of the atlas framework and explore some key features such as the BigBrain interactively. We then turn to concrete programming tutorials in Python. These include fetching brain region maps, accessing the BigBrain dataset, and extracting multimodal regional features such as cortical thicknesses, cell and neurotransmitter densities, gene expressions and connectivity data. We will finish with some concrete data analysis examples.

Requirements: For the practical examples you need a laptop with a current browser. All examples will be run in prepared Jupyter notebooks, which we will make available for download. Please contact us if you do not come with your own laptop.

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