Spatial Transcriptomics

for beginners

09:00am Session 1 Welcome and Introduction to Workshop

- Lecture: Spatial Transcriptomics Overview: What and Why?
- Lecture: Familiarizing participants with the dataset and analysis tasks

09:30pm Session 2 Data Preparation and Quality Control

- Check Quality Control (QC)
  - Lecture: Understanding quality control steps in spatial transcriptomics data
  - Hands-On: Practical QC demonstration using code
- Filtering
  - Lecture: Exploring data filtering techniques for improved analysis quality
  - Hands-On: Filtering data using provided code
- Preprocessing
  - Lecture: Introducing data preprocessing steps for downstream analysis
  - Hands-On: Preprocessing data with guided code examples

10:30pm Session 3 Clustering and Annotation

- Clustering and Differential Expression (DE) Analysis Techniques and Code Walkthrough
  - Lecture: Exploring clustering methods for identifying distinct cell populations
  - Hands-On: Clustering analysis through hands-on coding
- Cluster Annotation and Extended Spatial Plotting
  - Lecture: Annotating clustered cells and advanced spatial visualization
  - Hands-On: Practicing cluster annotation and optional spatial plotting

11:30pm Session 4 Neighborhood Enrichment Analysis

- Lecture: Understanding the importance of neighborhood analysis
- Hands-On: Running neighborhood enrichment analysis using provided code

11:55pm Final Session (Feedback and Closing)