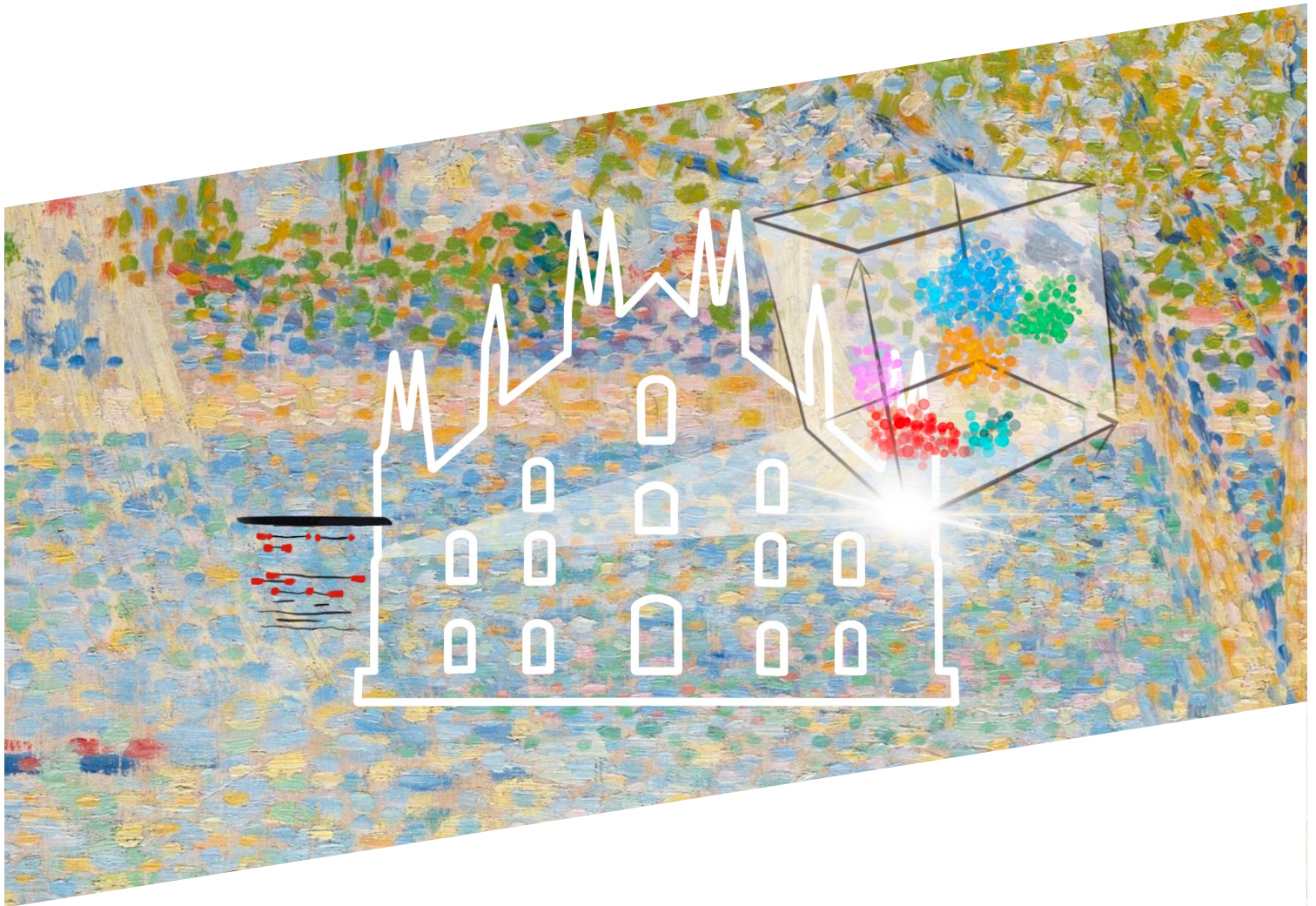


Advanced course

SINGLE CELL ANALYSIS BOOT CAMP



Università degli Studi di Milano
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**UNIVERSITÀ
DEGLI STUDI
DI MILANO**

MONDAY 22 JULY 2024

Introduction to single cell technology

Sala Lauree- via Conservatorio 7

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- h. 8.30-9.00 Registration
- h. 9.00-10.00 *Domenico Mavilio*
Welcome and presentation of the Advanced course
- h. 10.00-11.00 *Clelia Peano*
Single cell sequencing technologies and applications
- h. 11.00-12.00 Coffee break with the speakers
- h. 12.00-13.00 *Valentina Proserpio*
Single cell RNA-seq in fundamental and translational research

Aula informatica 2- via Conservatorio 7

- h. 14.00-18.00 *Simone Puccio, Luca Lambroia, Sara Terzoli*
Hands-on: Introduction to R Seurat package; loading data and creating Seurat objects; data quality control

TUESDAY 23 JULY 2024

TOPIC. scRNA-seq to dissect brain complexity

Sala Lauree- via Conservatorio 7

h. 9.00-10.00

Simona Lodato

Dissecting cerebral cortex diversity at single cell resolution:
implications for development and disease

h. 10.00-11.00

Giuseppe Testa

Neurodevelopmental disease modelling at single cell resolution

h. 11.00-12.00

Coffee break with the speakers

h. 12.00-13.00

Rocco Piazza

First-hit SETBP1 mutations cause a myeloproliferative disorder with
bone marrow fibrosis

Aula informatica 2- via Conservatorio 7

h. 14.00-18.00

Simone Puccio, Matteo Miotto, Anna Putignano, Silvia Della Bella

Hands-on: Dimensionality reduction and batch effect detection

WEDNESDAY 24 JULY 2024

TOPIC. scRNA-seq to dissect immune responses

Sala Lauree- via Conservatorio 7

h. 9.00-10.00 *Domenico Mavilio*
From RNA-seq to multiparametric flow cytometry: computational approaches merging two different technologies at single cell level

h. 10.00-11.00 *Emilia Mazza*
Molecular mechanisms of resistance to immune checkpoint blockade mediated by CD4⁺ regulatory T cells

h. 11.00-12.00 Coffee break with the speakers

h. 12.00-13.00 *Massimiliano Pagani*
Connecting topology to function in the tumor microenvironment

Aula informatica 2- via Conservatorio 7

h. 14.00-18.00 *Simone Puccio, Emilia Mazza, Roberta Carriero, Domenico Mavilio*
Hands-on: Detection of hypervariable genes, clustering and cluster tree: statistical analysis of differentially expressed genes

THURSDAY 25 JULY 2024

TOPIC. scRNA-seq and T cell biology

Sala Lauree- via Conservatorio 7

h. 9.00-10.00 *Enrico Lugli*
Profiling T cells in human cancer

h. 10.00-11.00 *Cecilia Dominguez Conde*
Human immune cells across tissues and age

h. 11.00-12.00 Coffee break with the speakers

h. 12.00-13.00 *Blagoje Soskic*
Single cell transcriptomics to explore immune disease mechanisms

Aula informatica 2- via Conservatorio 7

h. 14.00-18.00 *Simone Puccio, Sara Terzoli, Silvia Della Bella*
Hands-on: Pathway enrichment and definition of cell-cell interactions



FRIDAY 26 JULY 2024

TOPIC. Spatial transcriptomics and transcriptional control of cell identity

Sala Lauree- via Conservatorio 7

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| h. 9.00-10.00 | <i>Federica Marchesi</i>
Single cell transcriptomics: pros and cons of different approaches |
| h. 10.00-11.00 | <i>Silvio Bicciato</i>
Computational analysis of imaging-based spatial transcriptomics data |
| h. 11.00-12.00 | Coffee break with the speakers |
| h. 12.00-13.00 | <i>Chiara Laura</i>
Single cell transcriptomics to unveil immune responses in the liver |
| h. 13.00-14.00 | Final exam and customer satisfaction questionnaire |



Relatori

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