Postdoctoral Candidate in Bioinformatics

Paul-Arthur MESLIN

Ph.D. student in Bioinformatics
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Research interests

I am currently completing my PhD in bioinformatics, with a focus on the analysis of single-cell time-series datasets. My research primarily involves temporally resolved lineage tracing, aiming to better understand cellular processes over time. The goal of my research is to contribute to a deeper understanding of cellular dynamics, particularly in the context of response to treatment and disease progression.

Education

Ph.D. in Bioinformatics (on going) 2021-2024
Université Paris Cité, Paris, France (expected)
Supervisor: Dr. Camille Lobry

M.Sc. in Bioinformatics, Modelling and Statistics 2018-2021
Université Rouen Normandie, Rouen, France
- M2 in apprenticeship for 2 years: 50% in the laboratory, 50% at school.

B.Sc. in Biochemistry, Molecular and Cellular Biology and Physiology 2015-2018
Université Rouen Normandie, Rouen, France
- Basis of experimental biology, biochemistry, molecular and cellular biology, physiology and genetics.

Experience

Ph.D. Student, UMR 7212 / Inserm U944, Université Paris Cité, France 2021-2024
Supervisor: Dr. Camille Lobry (expected)
- Analyzed time-series single-cell RNA-seq data to trace cell lineage in acute myeloid leukemia studies.
- Conducted comparative analyses to evaluate the efficacy of temporal trajectory inference methods.

M2 Apprentice, UMR 7212 / Inserm U944, Université Paris Cité, France 2019-2021
Supervisors: Dr. Alexandre Puissant, Dr. Camille Lobry
- Developed 'PitViper', a software tool for meta-analysis and annotation in functional genomic screening
- Investigated genomic instability by analyzing NGS data, contrasting normal and tumor pairs in AML cases.

M1 Intern, UMR 7212 / Inserm U944, Gustave Roussy, France March-Sept. 2019
Supervisor: Dr. Camille Lobry
- Integrated ChIP-seq and RNA-seq datasets to identify and characterize super-enhancers in genomic studies.

L3 Intern, Inserm U918, Centre Henri Becquerel, Rouen, France April 2018
Supervisor: Dr. Pierre-Julien Viailly
- Evaluated and optimized existing pipelines for enhanced next-generation sequencing data processing.

L2 Voluntary Intern, TIBS team, LITIS, Université de Rouen Normandie, France May-June 2017
Supervisor: Dr. Arnaud Lefebvre
- Engineered a web application to dynamically visualize mass spectrometry data outcomes, enhancing data interpretability.

Publications

-Lin KH, Rutter JC, Xie A, et al. **P2RY2-AKT activation is a therapeutically actionable consequence of XPO1 inhibition in acute myeloid leukemia**. Nat Cancer. (2022)

-Fenwarth L et al. **A personalized approach to guide allogeneic stem cell transplantation in younger adults with acute myeloid leukemia.** Blood. (2021)

Key Skills

Single-cell Multiomics Analysis: Proficient in dissecting complex biological processes using single-cell RNA-seq, ATAC-seq, and multiomics integration to understand normal cell development.

Programming and Data Analysis: Advanced proficiency in Python and R for statistical modeling, data manipulation, and visualization; adept in Bash for workflow automation.

Bioinformatics Tools: Extensive experience with scverse ecosystem (scanpy, anndata, cellrank, scvi-tools), enabling sophisticated analysis of single-cell datasets.

Data Visualization: Skilled in creating informative visual representations of complex datasets using tools such as matplotlib, ggplot2, plotly and seaborn.

Reproducible Research: Committed to reproducibility using version control systems (Git, GitHub), containerization (Docker), and workflow management tools (Snakemake, Conda).

Machine Learning: Familiar with scikit-learn and related Python libraries for implementing machine learning algorithms in biological data analysis.

Teaching

Bioinformatics Master's Student Association Tutoring Coordinator, Rouen, France 2021
- Provide individualized Python programming and Linux tutoring to M1 students.

Conferences

Bioinfo Single Cell Seminar, Institut Curie, Paris 2023
- Presentation of my thesis project at a single-cell seminar

Journées Ouvertes en Biologie, Informatique et Mathématiques (JOBIM), Rennes 2022
- Presentation of a poster on PitViper

Languages

French: Native

English: Intermediate

Norwegian: Beginner, following Norwegian language and culture courses at the Maison de Norvège in Paris

References

Dr. Camille Lobry, Principal Investigator, Inserm U944, Université Paris Cité, France

Dr. Alexandre Puissant, Principal Investigator, Inserm U944, Université Paris Cité, France