

**Invitation to M.Tech. Thesis Defense of Ansari Ariba Abdul Majeed: December 19, 2022 (Monday): 05:00 PM-05:30 PM IST**

In Partial Fulfilment of the Requirements for the Degree of

**M.Tech. CB**

**Ansari Ariba Abdul Majeed (MT20336)**

Will defend her thesis

**Title: “STUDYING PRIMING AND POISING OF CELLS”**

IIIT-D Faculty and Students are invited

**Date: December 19, 2022 (Monday)  
Time:** **05:00 PM-05:30 PM IST**

**Meeting Link:** [**http://meet.google.com/tat-yday-tan**](http://meet.google.com/tat-yday-tan)

**Examiner: Internal:   Arjun Ray**

**~~External~~/Internal: Tarini Shankar Ghosh**

**Advisor: Vibhor Kumar**

**Co-Advisor NA**

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**Abstract**

An increase in research and development of single-cell genomics led to various insights into cells and their function, it has become a primary focus of research leading to many great discoveries. RNA velocity is one such method obtained through single-cell genomics data that gives information on newly transcribed pre-mRNA and mature mRNA and distinguishes among them. It has the potential to reveal the lineage relationships of a single cell, and predicts its future state on a time scale in a high-dimensional vector. One another great application of single-cell data is pathway enrichment analysis which gives the enriched biological pathways in a gene list. Here we aim to trace the lineage of single cells through RNA velocity and to find the pathways affecting the directionality of priming and poising of cells to get insights into the pathways activities. That is, which pathways are enriched during which lineage of cells will reveal which pathways are helping the cells to differentiate towards a particular lineage. Getting the relationship between the lineage of cells and the enriched pathways will be of great help in producing required cell type in vitro and ideal organoids and regenerative medicines.