Single-cell technologies and advanced data science techniques are disruptively changing our ability to understand and treat disease. Be the next to make a scientific breakthrough that can change the world.

At the Novo Nordisk Foundation for Basic Metabolic Research (University of Copenhagen), we are employing a number of single cell transcriptomics techniques and are now developing urgently needed computational tools to catalyze data into a better understanding of health and disease. We are currently looking for skilled and highly motivated students with an interest in data science, big data and biomedicine. The student projects will be centered around computational analysis and modeling of high-dimensional gene expression data using data science techniques. Our single-cell transcriptomic data sets typically comprise hundred thousand to millions of cells from various tissues throughout the mouse and human organisms and in particular from the brain.

Student projects
We are offering 5 to 35 ECTS point projects. If you are interested in solving challenging real-world biological problems using data science and computational modelling, we have some exciting opportunities for you:

- Understanding metabolic disease states through integration of large-scale single cell transcriptomics and human genetics data.
- Identifying disease susceptibility cell types and biological pathways in the human brain.
- Generating gene regulatory expression networks.
- Matrix decomposition methods to identify cell type specific biological pathways.
- Generative models for imputation of missing gene expression levels.

Requirements
We are looking for Master’s students and talented Bachelor’s students. You should possess a background in statistics, mathematics, computer science or bioinformatics and be familiar with basic data modelling or machine learning techniques. Prior experience in Python and its data analysis libraries, R or MATLAB programming is an advantage. No prerequisites in biology are required.

Contact
The project will be conducted in a vibrant environment at Novo Nordisk Foundation for Basic Metabolic Research (University of Copenhagen) in the Mærsk Tower (Blegdamsvej 3B) in the heart of Copenhagen. We closely collaborate with research groups from the Big Data Institute (Oxford University, UK) and the Broad Institute of Harvard and MIT (Cambridge, USA).

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