

MSc IN BIOINFORMATICS*

COMPUTATIONAL SOLUTIONS FOR BIOLOGICAL AND BIOMEDICAL PROBLEMS



◀ The Bioinformatics MSc programme gave us the chance to research the role of genetics in disease using real-time patient medical data at Aarhus University Hospital. For our thesis we used different statistical analysis methods to compare the bladder cancer tests from patients tested at the hospital with their blood tests, so as to study changes in the cellular DNA that might have contributed to developing the disease. We were looking for significantly mutated genes. This was an excellent preparation for our future jobs.

**MADS KROGH JENSEN
AND MATHIAS BRYGGER HANSEN**
MSc in Bioinformatics

A fusion of biology, statistics and computer science, the MSc in Bioinformatics programme explores the development and application of computational solutions for analysing and handling biological and biomedical data. A successful bioinformatics solution combines theoretical and practical knowledge from several areas of science, including biology, statistics and computer science – a network of competencies that students will acquire through this programme.

FINDING SOLUTIONS

The field of bioinformatics plays a key role in modern biology and biomedicine, fields in which collecting and analysing large data sets is essential. To address the challenges of big data in modern biology and biomedicine, a bioinformatician must combine practical and theoretical skills in statistical modelling and computer programming with a deep knowledge of biology and biomedicine. This programme gives students these skill-sets.

Teaching is greatly influenced by the innovative bioinformatics research taking place at Aarhus University, where all lecturers are also active researchers. AU has strong research groups within many areas of bioinformatics, including evolutionary bioinformatics (the study of how and in what way genomes or hereditary material in organisms develop over the course of time) and medical bioinformatics (the study of the correlations between diseases and genetic factors).

The bioinformatics programme at AU is based at the Bioinformatics Research Centre (BiRC), which focuses on the challenges involved in large-scale genomics and population genetics, including statistical modelling, algorithmic development, machine learning, and high-performance computing.

STUDENT LIFE

Bioinformatics students are affiliated with the Bioinformatics Research Centre, a vibrant community with lots of regular academic and social activities for both students and staff. Students meet their peers from the other AU science programmes through joint lectures, and participate in activities with students from programmes such as biology or computer science. A number of student organisations also arrange academic activities, as well as excursions, celebrations and social get-togethers.

CAREERS

Graduates with a Master's in Bioinformatics are prepared not only for jobs as bioinformatics specialists in the biotechnology industry, but also in additional areas in which computational skills in analysing large amounts of data are essential. They are also in demand among employers in the IT industry as potential software developers.



PLACE OF STUDY

Aarhus

WWW

masters.au.dk/bioinformatics

ANNUAL TUITION FEE

EU/EEA/Swiss citizens: FREE

Others: EUR 13,500