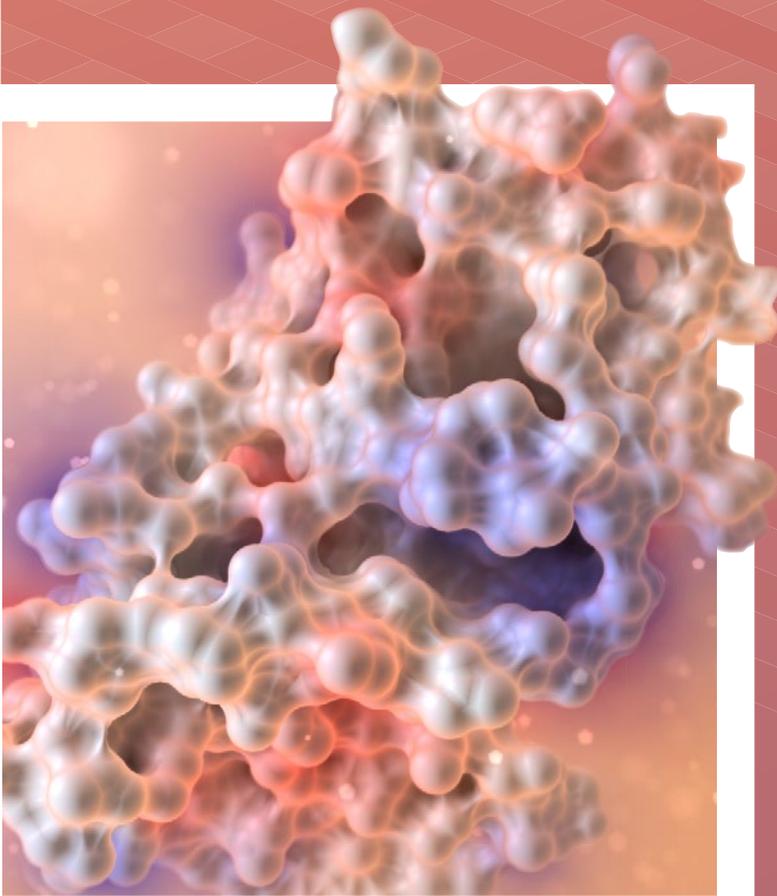


GAIN MOMENTUM WITH GROUNDBREAKING SIMULATION AND VISUALISATION

**Computer Graphics Lab develops software for
visualisation and simulation of medical, biological
and quantum physical data**



FASTER, BETTER AND BIGGER

The Alexandra Institute's Computer Graphics Lab develops software that meets the needs of companies and research units working with state-of-the-art computer models, large measurements and requiring fast computations and data analysis on complex and massive data sets.

MOLECULAR VISUALISATION

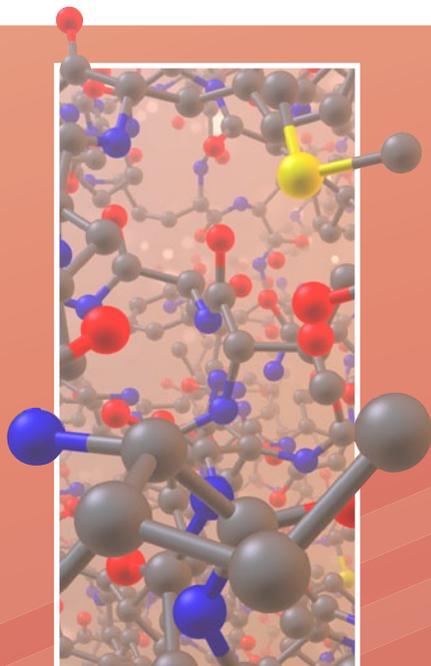
We can visualise and simulate complex molecular systems. Medical visualisation of molecular systems can be used for research, teaching and industrial purposes.

MEDICAL VISUALISATION

We develop software that helps to visualise and analyse medical image data as well as software for surgical simulation that is used for training and teaching prior to complicated operations.

See more on cg.alexandra.dk





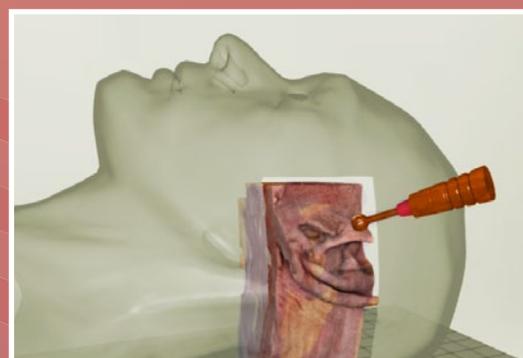
We develop solutions that can process extremely large data sets

We develop software for molecular and medical visualisation. The software for molecular visualisation is useful e.g. in the development of pharmaceutical drugs, where one needs to know how two chemical compounds interact. But it can also be used within nanoscience in studies of which importance the building of nanostructures at the atomic level has for the electrical conductivity of a material. Today computer chips are designed in such a small scale that it is an important design parameter.

The software for medical visualisation is used for analysis of medical image data and for surgical simulation. Today when a patient has a CT or MRI scan, massive and complex data sets are generated. But the existing visualisation tools cannot exploit all the information in the scanned images. We develop solutions that are able to process extremely large data sets, provide a higher quality, and open up for completely new applications of scans for e.g. surgical simulation, collaborative solutions and diagnosing as a web service. In recent years, Computer Graphics Lab and researchers from Copenhagen University Hospital have developed The Visible Ear Simulator, a surgical simulator where ear surgeons are trained to perform complicated and risky surgical procedures.

WE ARE AHEAD OF THE MARKET

Computer Graphics Lab's technology understanding develops in time with the latest research in the area. Our computations are based on state-of-the-art mathematical models that in turn result in highly accurate visualisations and simulations, and our software solutions are ahead of the market. This provides our partners with a unique competitive advantage. We base our consultancy services and software solutions on the specialist knowledge in our team that consists of PhDs within computer science and quantum physics. Across technologies we also work with support of innovation and user involvement.



MOLEGRO

Molegro is a Danish company that uses molecular visualisations to study whether a given pharmaceutical compound acts as expected. Molegro studies whether small molecules interact with proteins, if they are adhesive and can connect, and whether they change the behaviour of a given protein. Computer Graphics Lab has helped Molegro to compute and display state-of-the-art molecular surfaces via the graphics card in real time, so the company can now get more information about the interaction of the molecules with the proteins.

QUANTUMWISE

QuantumWise uses molecular visualisations for simulating electrical properties of e.g. chips at the nanoscale. They wanted to simulate larger and more complex molecules, but the real time visualisation was not possible with existing technologies. Computer Graphics Lab's solution minimised the amount of data that should be used as the basis of the rendering and the number of times it had to be moved. This made the speed of the presentation 500 times faster, and it became possible to show significantly larger molecules.



CONTACT US IF YOU WANT TO KNOW MORE

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The Alexandra Institute develops advanced, innovative IT solutions with our collaborators and customers. We do this by integrating commercial relevance, the latest IT research, technology and user involvement. We offer the strongest and most versatile skills within consultancy, development and application of IT and technology in Denmark.

