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MOLEGRAM Explorer

Mixed Reality application for students to dive into the world of molecules. You become a water molecule and can take a holographic walk on a protein surface.

We present the MOLEGRAM Explorer which allows students to better understand the concept of the solvent-accessible molecular surface. In the Computer-Assisted Drug Design practical class, the participants use this application to examine and interact with a protein and learn the influence of different solvents on the protein structure. The application is designed for a 15 min. usage, including an introductory movie. 15-20 min. are required to familiarize oneself with the Hololense hardware. The MOLEGRAM Explorer enables collaborative learning by providing a real-time synchronized view of the hologram to all participants. A shared pointer allows the instructor to focus the participants' awareness on certain areas of the protein. The application also offers the "Explorer mode" allowing the students to apply the new concept in an individualized environment. Currently, the cumbersome handling of the Hololense hardware limits its practical use to small groups. For the best experience, a sufficiently large empty space is needed. Only then, the participants can fully submerge into the topic by physically circle and investigate the virtual hologram. As a prerequisite, a basic understanding of protein structures is required.