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For our institute **Simulation and Software Technology** in **Braunschweig**, we wish to recruit a qualified

Master Thesis

Novel Interaction Techniques for Future Flight Guidance Systems

Your mission:

Today's airport traffic control faces increasing requirements on safety, efficiency and environmental aspects. Traditional, mostly heterogenic and inefficient, controller input devices and 2D representations of a 3D world make it challenging to maintain the growing traffic complexity. The idea behind this Master's project is to look at future air traffic control workspaces utilizing immersive virtual reality technology to visualize the airport within an immersive display, such as CAVE, Powerwall or L-Bench, and to display trajectories of air traffic in 3D with which the user can intuitively interact, e.g. freely change the view and when flight path collisions are detected simply grasp "in the air" to select an airplane and reassign it to a new trajectory. To demonstrate and evaluate this vision, a prototype of a new innovative flight guidance system shall be developed and appropriate interaction techniques be integrated. The key challenges are to find suitable 3D visualization methods for trajectories and airplanes (e.g. simple but informative) and to investigate suitable interaction techniques with respect to hand/finger tracking and appropriate selection methods (e.g. intuitive and reliable). The new approaches shall be evaluated together with experts and users from the flight guidance domain.

Your qualifications:

- Bachelor in Computer Science or related areas
- C/C++ programming experience
- Knowledge in Human Computer Interaction
- Basic knowledge in Computer Graphics
- Knowledge in Virtual Reality and interaction devices is an asset

Your benefits:

Look forward to a fulfilling job with an employer who appreciates your commitment and supports your personal and professional development. Our unique infrastructure offers you a working environment in which you have unparalleled scope to develop your creative ideas and accomplish your professional objectives. Disabled applicants with equivalent qualifications will be given preferential treatment.

This thesis will be co-supervised by the Computer Graphics and Virtual Reality Department at University of Bremen and DLR. If you have any questions concerning specific aspects of the job, please contact Prof. Dr. Gabriel Zachmann (zach@informatik.uni-bremen.de) or Dr. Robin Wolff (robin.wolff@dlr.de) by calling +49 (0)531 295-2970. Please find further information on this vacancy or other open positions at <http://www.dlr.de/dlr/jobs/#SimulationsSoftwaretechnik>.



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