# Visualizing 3D trajectories to extract insights about their similarities and spatial configuration is a critical task in several domains.

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**Résumé**

Air traffic controllers for example deal with large quantities of aircrafts routes to optimize safety in airspace and neuroscientists attempt to understand neuronal pathways in the human brain by visualizing bundles of fibers from DTI images. Extracting insights from masses of 3D trajectories is challenging as the multiple three dimensional lines have complex geometries, may overlap, cross or even merge with each other, making it impossible to follow individual ones in dense areas. As trajectories are inherently spatial and three dimensional, we propose FiberClay: a system to display and interact with 3D trajectories in immersive environments. FiberClay renders a large quantity of trajectories in real time using GP-GPU techniques. FiberClay also introduces a new set of interactive techniques for composing complex queries in 3D space leveraging immersive environment controllers and user position. These techniques enable an analyst to select and compare sets of trajectories with specific

**Bio :** I am a professor at the Interactive Data Visualization group (part of the DEVI team) of the French Civil Aviation University (ENAC) in Toulouse, France. I am also an associate researcher at the research center for the French Military Air Force Test Center (CReA).
In 2010, i received my PhD in Computer Science from the Toulouse university and in 2014 i got my HDR (Habilitation à Diriger des Recherche).

My research cover information visualization (InfoVis) and human-computer interaction (HCI), especially the visualization of multivariate data in space and time. I also investigate the design of scalable visual interfaces and the development of pixel based rendering techniques.
Throughout my career I have been involved with several projects including: large data exploration tools, graph simplifications (edge bundling), paper based interactions, augmented reality, 3D visualization...
As an professor, I disseminate my knowledge to students in various places and at different stage of their training (engineer students, master students). My lecture topics are the one close to my research investigations: computer graphics and interactive big data visualization.

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