

Piece-wise 3D reconstruction of Euler spirals from planar polygonal curves.

3D reconstruction is a technique that involves creating a 3D representation of a three-dimensional model, it is one of the most important techniques in computer graphics. It is used by many industries such as modeling virtual humans for video games, special effects for cinema, industrial design, virtual reality, etc... Our Ph.D. work focuses on the 3D reconstruction of Euler spirals, motivated by its simplicity, properties (invariance to similarity transformations, symmetry, curvature and torsion evolve linearly with curve length), and its occurrence in nature, architecture... In the presentation, I'll discuss the following points:

- Motivation of why we chose to work on the Euler spiral.
- Euler spiral equation and properties.
- Why we chose to do a piece-wise matching and not other matching techniques.
- The approach that we did in order to do the 3D reconstruction of Euler spiral:
 - How we create the dataset that we'll use for matching.
 - How we did the piece by piece matching.
 - How we did the pieces assembling.
- Our future work.