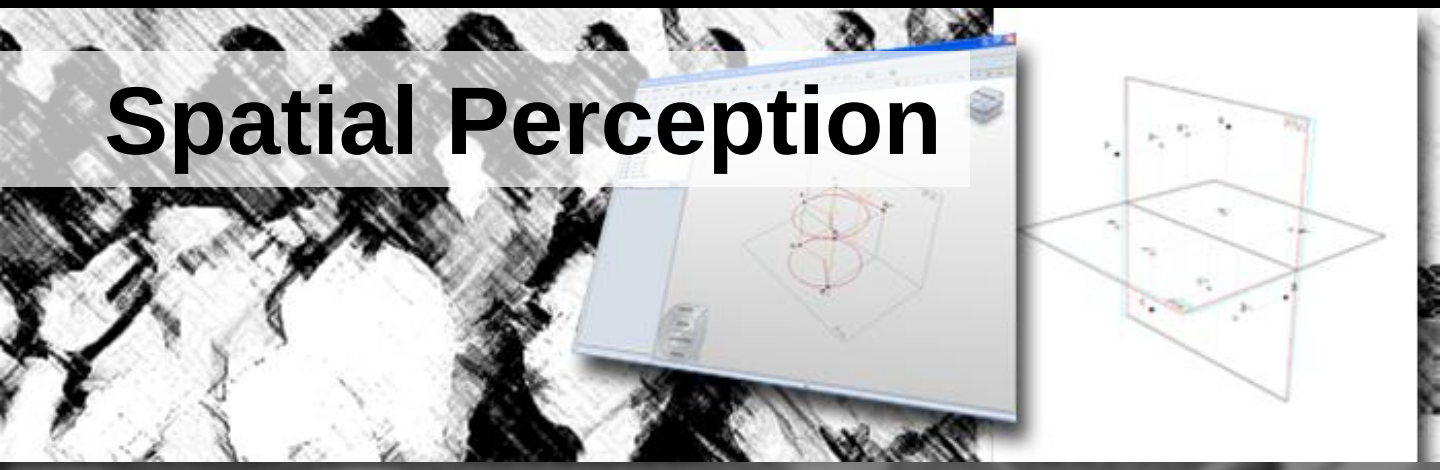
Spatial Perception



Understanding the nature of a 3D scene, the spatial relationship between the different objects within the scene and the observer itself, and what happens when there is a change of position,... this is a complex cognitive skill usually developed at an early age. It is called spatial awareness or spatial perception, and it is closely related to other primary skills, as **depth perception** and **spatial visualization**.

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This skill is named also **spatial intelligence** in the **theory of multiple intelligences**. Spatial intelligence is the intelligence that deals with spatial judgment and the ability to visualize with the mind's eye. **Howard Gardner** says also that it is the human computational capacity that provides the ability or mental skill to solve spatial problems of navigation and visualization of objects from different angles.

As lecturers of *Technical Drawing*, we deal with problems of spatial visualization in a daily basis. Our students of *Mechanical Engineering* have to imagine the 3D relations between different objects using a 2D media to represent them. This is the main reason of our interest in studying the spatial perception problems.

Projects

Galería Multimedia de Estructuras Moleculares Optimizada para Propósitos Docentes
Molecular Structures Virtual Gallery for Teaching
Educational Innovation Projects, University of Oviedo (2007)

Elaboración de material estereoscópico para la didáctica de los Sistemas de Representación. Sistema Diédrico y Sistema Acotado
Stereoscopic and Virtual 3D models for Descriptive Geometry learning
Educational Innovation Projects, University of Oviedo (2006)

Papers

Parallax cues in the design of graphics used in technical education to illustrate complex spatial problems.
Santiago Martín, Ramón Rubio
Computers & Education. 01/2009; 53:493-503.

Proposal of interactive applications to enhance student's spatial perception
Samuel Morán, Ramón Rubio, Ramón Gallego, Javier Suárez, Santiago Martín
Computers & Education. 01/2008;50:772–786

Books

Otra forma de ver el Sistema Diédrico
(A different way to understand Descriptive Geometry)
Ed. Pearson, ISBN 978-84-8322-385-7