Department of Computer Science, The University of Hong Kong

CS Seminar

Self Intersections in Freeform Curves and Surfaces

Prof. Gershon Elber
Department of Computer Science
Technion, Israel Institute of Technology

Date:
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Friday
3:00 pm

Venue:
Room 308
Chow Yei Ching Building
The University of Hong Kong

Abstract:

Curve-curve and surface-surface intersections are considered difficult problems in geometric designs with numerous results on these topics. The detection and more so the computation and even elimination of self-intersections in curves and surfaces is viewed by many as a far more challenging problem. Over the years, we developed several methods to robustly detected, compute and even eliminate self intersections in general freeform (typically NURBs) curves and surfaces, exploiting intrinsic and/or geometric properties, on one side, and the algebraic structure of the shape, on the other. Other methods are specific and employ special properties of the problem in hand, such as the case in offset computation. In this talk, I will survey these results and provide a birds view of the current state-of-the-art on the self-intersections problems.

About the Speaker:

Gershon Elber is a professor in the Computer Science Department, Technion, Israel. His research interests span computer aided geometric designs and computer graphics.

Prof. Elber received a BSc in computer engineering and an MSc in computer science from the Technion, Israel in 1986 and 1987, respectively, and a PhD in computer science from the University of Utah, USA, in 1992. He is a member of the ACM.

Prof. Elber has served on the editorial board of the Computer Aided Design, Computer Graphics Forum, The Visual Computer, and the International Journal of Computational Geometry & Applications and has served in many conference program committees including Solid Modeling, Shape Modeling, Geometric Modeling and Processing, Pacific Graphics, Computer Graphics International, and Siggraph. Prof. Elber was one of the paper chairs of Solid Modeling 2003 and Solid Modeling 2004, and will be the conference chair of Solid Modeling 2010. He has published over 150 papers in international conferences and journals and is one of the authors of a book titled "Geometric Modeling with Splines - An Introduction".

All are welcome!
For enquiries, please call 2859 2180 or email enquiry@cs.hku.hk
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