Programming #4 (4190.410)

Due: November 18, 2013

A bicubic Bézier surface $S(u,v) = \sum_{k=0}^{3} \sum_{l=0}^{3} \mathbf{b}_{kl} B_k^3(u) B_l^3(v)$, $0 \leq u, v \leq 1$, can be approximated by a dense mesh sampled at the uniform parameters: $u_i = i/511, v_j = j/511$, for $i, j = 0, \cdots, 511$. Using an arbitrary image of your own choice, apply a texture mapping to the Bézier surface $S(u,v)$.

Design an interactive system that can control the shape of $S(u,v)$ by dragging its control points projected onto the xy, yz, and zx-planes. The connected network of 16 control points can be displayed as a wireframe of 24 edges, each connecting two adjacent control points.