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*Facial Recognition Using Conformal Geometry.*

A 3-D scan of a face is taken and transformed into a hyperbolic surface with constant curvature using conformal geometry. The goal is to see if conformal geometry is useful in analyzing and distinguishing faces. Each vertex of the data is assigned a radius to create a circle packing metric. These radii are adjusted using Ricci flow to reduce the curvature of the face, yielding a smooth hyperbolic surface. Geodesics are extended from the boundaries of the hyperbolic surface until collisions occur, forming a ribbon graph. The shape of the ribbon graph and the length of its edges are used to provide a unique signature for the face. We will compare the signatures of different faces to determine the effectiveness of our methods. (Received July 27, 2010)