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Chris Aholt, Sameer Agarwal and Rekha R Thomas* (rrthomas@uw.edu). *The Triangulation Problem in Computer Vision.*

The triangulation problem in computer vision is the problem of reconstructing 3-dimensional scenes from a number of noisy 2-dimensional camera images. This problem lies nicely at the intersection of algebraic geometry and optimization and can be naturally modeled as finding the closest point to the given observation in an algebraic variety. I will demonstrate how algebra and combinatorics is used to find the constraints and how methods from convex and semidefinite optimization is used to solve the optimization problem to obtain reconstructions of very high accuracy. (Received August 25, 2012)