# EPSTEIN DEPT SEMINAR

Computational Conformal Geometry, Theory, Algorithms and Applications

ABSTRACT - Conformal geometry is the intersection among Differential geometry, Riemann surface theory and Algebraic topology, which offers powerful tools for general geometric processing tasks, such as surface deformation, surface registration and shape analysis. In this talk, we briefly introduce the main theorems in conformal geometry, especially surface uniformization, Abel-Jacobi theorem; major algorithms, including non-linear heat diffusion, holomorphic differential and surface Ricci flow; some applications in computer graphics, computer vision, wireless sensor netowrk, geometric modeling, medical imaging and topology optimization.
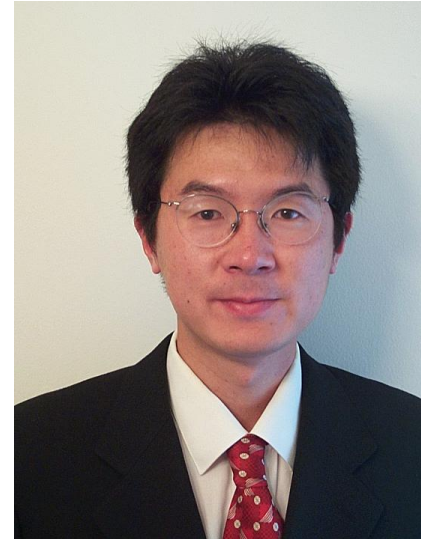
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SPEAKER BIO - Dr. David Gu got his B.S. from Tsinghua University, MS and PhD from Harvard University in 2003, supervised by a Fields medalist, Prof. Shing-Tung Yau. Dr. Gu currently is an Associate Professor in the Computer Science Department at Stony Brook University, affiliated with the Center of Mathematical Sciences and Applications, Harvard University. Dr. Gu got NSF CAREER award in 2005, Morningside Gold Medal for Applied Mathematics in 2013. Prof. Yau and Dr. Gu, together with collaborators, founded an merging interdisciplinary field: Computational Conformal Geometry, which combines Modern Geometry and Computer Science, and applied for a broad range of engineering fields, such as Computer Graphics, Computer Vision, Geometric Modeling, Networking, Medical Imaging and CAD/CAE. Dr. Gu has about 300 publications, several books, including "Computational Conformal Geometry", "Ricci Flow for Shape Analysis and Surface Registration" and so on. His patent on virtual colonoscopy has been licensed to Simens and GE, and broadly applied in clinics worldwide.

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TUESDAY, SEPTEMBER 24, 2019
4:20 PM – 5:00 PM
USC ANDRUS GERONTOLOGY CENTER (GER), ROOM 206