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DEPARTMENT OF COMPUTER SCIENCE  
BINGHAMTON UNIVERSITY**

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ALL WELCOME

**“PROJECTIVE CLUSTERING AND ITS APPLICATION  
TO SURFACE RECONSTRUCTION”**

**Dr. Piyush Kumar  
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**ABSTRACT**

Unorganized point clouds have recently become common due to their ease of acquisition through Laser, LIDAR, and stereo based scanners. Applications of unorganized point cloud methods range from bio-informatics to defense applications. In this talk, I will present our method to estimate accurate normals from unorganized point clouds in three dimensions. The main technique behind this computation is projective clustering that helps estimate better normals for point clouds sampled on sharp features. Our algorithm is parallel, external memory friendly, higher in accuracy and speed compared to previous systems and can handle sharp features and corners. I will also present the design of a parallel dynamic nearest neighbor data structure for this application.

Biography:

Dr. Piyush Kumar is an Assistant Professor in Computer Science at Florida State University since 2004. He received his B.Sc. degree in Mathematics and Computing from IIT Kharagpur in 1999. He moved to New York in 2000 where he received a Ph.D. in Computer Science from State University of New York at Stony Brook in 2004. Prior to joining Florida State, he was a visiting scientist at Max Planck Institute, Saarbruecken, Germany. Currently, Dr. Kumar is associated with the Center of Applied Vision and Imaging Sciences at Florida State.

