# 結構光條紋視覺系統之表面量測

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## 摘要

Reconstructing 3D shape from 2D projections is becoming an increasingly important topic in computer vision and has been applied in various domains. In reverse engineering, product development may be expedited by measuring the surface information of a solid model to reconstruct its 3D virtual model in the reverse sense. In addition, many industrial processes need an accurate 3D measurement of their products. This is particularly important for parts of complex geometry, which are present at several industries such as ceramics, plastics, castings, shoe making, etc. In this paper a CCD camera, two laser projectors, and an X-Y-Z translation stage was used to form a structured light stripe vision system. Two laser projectors will be used to solve the problem that the stripes may not be projected onto some part of an object surface to ensure that complete 3D surface measurement information may be acquired.

關鍵字：CCD camera, Laser projector, Structured light stripe system, Error evaluation, Pipe dimension measurement