Adding Surface Detail...

Common low-cost 3D capture approaches capture **colour surface information in addition** to the underlying **3D surface geometry** [1].

The resulting **2D colour texture map** for the surface often contains considerably **more localised surface relief detail** than the actual underlying **3D shape mesh** [2].

Here we aim to **enhance the level of 3D surface relief detail** using additional surface detail present in the corresponding 2D colour texture map.

Extracting 2D Texture Detail

The **key edge information** present in the texture map is **extracted** via a two-stage process of **edge enhancement** (Laplacian of Gaussian subtraction) and **Canny edge extraction**.

Enhanced Detail Results

The resulting 2D edge information is then transposed as a **displacement map** onto the 3D surface. This results in **increased 3D relief detail** in the underlying 3D shape mesh itself.

Further Work

Further work will investigate **geometric detail extraction** and **automatic relative displacement determination**.